This is Gemini Launch Control. We are coming up on T-280 minutes and counting. Mark, 280 minutes and counting on the Gemini 7 mission. Our countdown has been proceeding excellently throughout last evening and this morning. As far as the terminal phase of the count is concerned we picked up with the launch vehicle at T-360 minutes and counting at 8:30 a.m. EST. The launch vehicle is due to join us in the terminal count at the T-240 minute mark which is four hours before launch and here at the Cape will be 10:38 a.m. EST. As far as our checkouts late last evening and this morning have gone, everything has been going well. We loaded the propellants aboard the Titan II launch vehicle starting about 10 p.m. last evening. This operation took a little less than four hours. Following the successful completion of the propellant loading, we then began to top off the liquid hydrogen bottle that services the fuel cell. This is the liquid hydrogen that is fed into the fuel cell during the flight. This all went well and an hour and 15 minutes after we started feeding in the liquid hydrogen we were ready to go. All systems still looking good at the present time. Astronauts Edward White and Michael Collins came aboard the Gemini 7 spacecraft about 8 o'clock this morning. An half an hour prior to that time they had a nice big breakfast of steak and eggs. These are the backup pilots, Astronauts Edward White and Mike Collins. The prime pilots of the mission, Frank Borman and Jim Lovell had a late breakfast this morning at about 7:30. This consisted of some toast, orange juice and some coffee. They expect to have their big breakfast about 35 or 40 minutes from now. All systems still looking good at the launch pad and we understand everything is going well in the crew quarters. As far as our weather situation is concerned, which is the final point of this first report. We do have cloudy weather in the Cape area. We expect it will be with us most of the day. However, at the present time, although there are some scattered showers we expect we are just about getting the worst of the situation at the present time and the rain should leave us later in the morning. We presently have cloudy conditions but we do have a ceiling of about 10,000 feet which would be very acceptable for launch. Clouds are expected to remain with us but it is not considered to be a problem. As far as the remainder of the Gemini Tracking Network is concerned weather is

acceptable for launch in all areas. If Frank Borman and Jim Lovell are launched on time today, they may get a good look at a cyclone condition that is in the Indian Ocean just south of the equator. We are at T-277 minutes and counting. This is Gemini Launch Control.

This is Gemini 7 Launch Control. We are just under T-250, 51 minutes and counting, T-251 minutes and 23 seconds and counting at the present time. Our countdown on the Gemini 7 mission is proceeding satisfactorily. Everything looks good. There are no known problems at the present time. At the launch pad they are looking forward in some 10 to 12 minutes to having the launch vehicle join the spacecraft in the so-called "terminal phase" of the Gemini 7 count. In the white room at Launch Complex 19 Astronauts Edward White and Mike Collins, the backup pilots of the Gemini 7 mission are in the spacecraft checking out various systems. Early this afternoon they will be ready to report to the prime pilots, Frank Borman and Jim Lovell on the status of the Gemini 7 spacecraft. Everything looking good at the present time. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. We are now at T-239 minutes, 15 seconds, and counting. At this stage in the Gemini 7 countdown, the launch countdown has just joined the spacecraft count which, of course, has been proceeding for about an hour at this time. We are now in a so-called terminal count with the launch vehicle and the spacecraft counting simultaneously and we are making various verifications between the spacecraft and the launch vehicle to be sure that the interface is all going well. Our countdown continues to proceed excellently. Everything looking good at the present time. This is Gemini Launch Control.

END OF TAPE

This is Gemini 7 Launch Control, with a T-211 minutes and counting. It's coming up on 1 minute before the hour. Our countdown on the Gemini 7 mission is proceeding normally. Astronauts Frank Borman and Jim Lovell completed their physical exam and were reported in good shape. The astros were reported in high spirits as they came back from the examination room to their quarters to have their breakfast. They are having breakfast now with some 12 to 13 guests. We hope, in a short while, to give you a complete list of the guests who did have breakfast with astronauts Borman and Lovell. Jim Lovell, as he came back to the crew quarters, did comment to a few people in the hall that he was looking forward to a good long flight. Everything proceeding normally at the present time on Gemini 7. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. Now T-195 minutes and counting. All proceeding normally in the Gemini 7 countdown at the present time. We have been informed that Astronauts Frank Borman and Jim Lovell, the prime pilots of the 7 mission have departed from the crew quarters and are now on their way to the Launch Complex 16 trailer where they will put on their lightweight space suits and be ready for the call to go to the pad a little later in the countdown. Borman and Lovell took their physical at about 40 minutes ago, they were in good shape, then they went down to have breakfast with 10 of their Astronaut colleagues. The breakfast menu consisted of the following: Tenderloin steak, eggs, toast, assorted jelly, orange juice and coffee.. Borman and Lovell had had a light breakfast shortly after they got up, a little bit after 7 a.m. e.s.t. this morning. That light snack consisted of orange juice, coffee, and toast. To repeat the menu at the breakfast that just ended some 15 or 20 minutes ago, it consisted of tenderloin steak, eggs, toast, assorted jelly, orange juice and coffee. Attending the breakfast with Astronauts Borman and Lovell were the following NASA Astronauts: John Young, Pete Conrad, Richard Gordon, Donald K. Slayton, David Scott, Neil Armstrong, Gus Grissom, Alan Shephard, Wally Schirra, and Tom Stafford. The latter two, Schirra and Stafford of course, are the pilots for the Gemini 6 mission which will be scheduled some 9 days after the Gemini 7 lift-off. Neil Armstrong and Dave Scott are the pilots who are assigned to the Gemini 8 mission which will follow the 7 and 6 flights. That was the list of the Astronauts who attended breakfast. As far as assignments go, the Gemini 6 pilots, Wally Schirra and Tom Stafford, and the Gemini 8 pilots, Neil Armstrong and Dave Scott, will be observing the launch from locations at the Cape. They are not designated at the present time. They do not have any specific duty assignments concerned

with the Gemini 7 mission. Our countdown continues to proceed satisfactorily. Everything looking good at the present time. We are in the process of clearing the Launch Complex at Pad 19 in preparation for the launch vehicle pressurization which will occur some 30 minutes from this time. The blockhouse doors will be sealed, and the pressurization of the nitrogen aboard the launch vehicle to pressurize the fuel system will begin. Everything still looking good at the present time. Coming up on 192 minutes and counting. This is Gemini Launch Control.

END OF TAPE.

This is Gemini Launch Control now coming up on T-173 minutes and counting. We are just a little less than 3 hours from the launch of Gemini 7 at the present time. The prime pilots, Frank Borman and Jim Lovell, have now arrived at the suit trailer at Launch Complex 16 where they will don their lightweight suits in preparation for the flight. At Launch Complex 19, the blockhouse door is still sealed. All personnel are still off the pad as we complete our pressurization of the II Stage Titan 2 Launch Vehicle. This is pressurizing the Launch Vehicle propellants in both stages with nitrogen in order to get the propellant system at the proper stage for launch. All systems still going well at the present time. We have no known problems on the count at the present time. Now T-172 minutes, 10 seconds, and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. We are coming up on T-160 minutes and counting. Mark! T-160 minutes and counting on the Gemini 7 mission. Everything is still proceeding excellently at the present time both at Launch Complex 19 and in the suit trailer where the prime pilots, Frank Borman and Jim Lovell are now checking out their lightweight suits, donning them in preparation for coming to the Launch Pad later on this morning. Everything is going very well at the present time. The backup pilots for Gemini 7, Astronauts Ed White and Mike Collins, have returned to the Gemini 7 spacecraft. They were out for some 50 minutes while the Titan II launch vehicle below them was being pressurized. The pad has to be cleared during this period as we feed the nitrogen pressure into the launch vehicle tanks. Everything looking very well at the present time. Both White and Collins are checking with the blockhouse. They are checking out their communications systems in preparation for a series of switching tests within the spacecraft. This is actually putting the spacecraft switches at the proper marks. This will be coming up some 10 or 15 minutes from now. Frank Borman and Jim Lovell, who are described as in good spirits came down to the trailer at Launch Complex 16 in their blue flight suits and they are now inside making their final preparations for the flight. We are now at T-158 minutes and 35 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control now coming up on T-119 minutes and counting. MARK, T-119 and counting, just a little bit shy of 2 hours away from the Gemini 7 launch. All conditions still going well. We have had an excellent countdown thus far this morning both with the spacecraft and the launch vehicle. The backup pilots for the Gemini 7 mission, astronauts Ed White and Mike Collins, are still aboard the Gemini 7 spacecraft making some final checks of the switches and reading out information from the spacecraft dials to the capsule communicator in the blockhouse, Astronaut Alan Bean, also reporting back to the Mission Control Center in Houston. We have received word that the activities in the suit-up trailer at Launch Complex D, Launch Complex 16 are going along fine. Astronauts Borman and Lovell have been alerted to get ready to be called to the pad very shortly. Our weather conditions seem to be improving as the time goes by this morning. We still do have overcast skies in the Cape area and they are expected to remain. But we expect a ceiling above 13,000 feet by launch time. Visibility in the Cape area at launch time should be about 10 miles. We will have winds that are light and variable. A 2-foot sea off the Cape and a temperature of about 75 degrees. Pass word around the Gemini track around the world is that the weather is acceptable in all places for launch. The Tiros weather satellite picked up a tropical disturbance in the middle of the Indian Ocean, and this has been reported, but it will not affect the flight. In fact, Astronauts Borman and Lovell may get a good look at it during some of the early phases of the Gemini 7 mission. Now coming up on T-117 minutes and counting. Everything looking well in the count proceeding at this time. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. We are coming up on T-109 minutes and counting. Mark! T-109 and counting and at this particular point in the countdown Astronauts Frank Borman and Jim Lovell, the prime pilots, are due to depart from the trailer and we have a report now that they have left the trailer and are aboard the transfer vehicle that will take them to Launch Complex 19. Everything is going well on the countdown for Gemini 7 this morning. We have had no holds and no known problems at the present time. The checkout has been very good, both with the spacecraft and with the launch vehicle. Just about 5 to 10 minutes ago, the backup pilots, Ed White and Mike Collins got out of the Gemini 7 spacecraft and they will be waiting at the pad to report to Borman and Lovell that everything is in good shape for the Gemini 7 flight at the present time. The fuel cell has gone on internal power in the spacecraft. The crew is now in the truck and they are proceeding toward Launch Complex 19. The fuel cell, as I reported a moment ago, had been on the automatic ground equipment power supply and is now on internal power within the spacecraft itself. It is completely checked out and it is giving us good readings at the present time. Now T-170 - correction T-107 minutes and 35 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. Now coming up on T-106 minutes and 2 seconds and counting. The prime pilots for the Gemini 7 mission, Frank Borman and Jim Lovell, have arrived at Launch Complex 19, are now in the elevator and going up to the white room at the Complex. As they step out they will be briefed quickly by the backup pilots, Ed White and Mike Collins, on the status. It is expected they will be told that the status is very, very good. We have had an excellent countdown as reported earlier. There are no known problems and we have not encountered any holds during the period. The elevator is now stopped at the white room level and Frank Borman and Jim Lovell have stepped into the white room. They are in their lightweight suits, they have their helmets attached. They will get a quick report at this time and board the spacecraft. Shortly after the ingress, shortly after they go over the shelf in the spacecraft, they will start making some preliminary communications checks and also some checks of the various medical systems that will be used on the flight. One of the early checks is some blood pressure checks conducted between the astronauts in the spacecraft and the medical monitors in the blockhouse. Throughout the remainder of the countdown they will be reporting both to their capsule communicator, Alan Bean in the blockhouse, and back to the Mission Control Center in Houston on the final status of the spacecraft as we proceed toward the last moments prior to lift-off on Gemini 7. The pilots will be boarding the spacecraft shortly. We are now T-104 minutes 19 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. Now coming up at T-99 minutes and counting on what has been an excellent countdown for the Gemini 7 mission this morning. The prime pilots, Frank Borman and Jim Lovell were over the hatch and into the spacecraft some 3 minutes ago. The first conversation that occurred between Borman who is designated crewman 1 in the countdown, was with the spacecraft test conductor, Mr. Fritz Widek, he spells his last name Wi - d for Donald - ek. Fritz said to Frank, "welcome aboard," Frank said "thank you, how does it look?" Widek reported back that it looks very good and on schedule. The astronauts are now starting some communications checks with both the blockhouse and with the Mission Control Center in Houston. All looking good as we approach the 98 minute mark in the Gemini 7 countdown. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control coming up on T-89 minutes and counting. T-89 minutes and counting. Everything still looking good on the Gemini 7 countdown at the present time. The countdown itself is primarily focused on the two gentlemen in the spacecraft. At the present time, crewman 1 and crewman 2, of course, is Frank Borman and Jim Lovell, prime pilots for the flight. Our checkout has shown that we have got a good blood pressure reading from both of them as we start to proceed with some of the preliminary checks after the prime pilots have come aboard. The countdown continues to go smoothly. Everything looking well at the present time. We are now at T-88 minutes 20 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control now T-79 minutes and counting. All systems still looking good on the countdown for Gemini 7 mission at the present time. As far as the particular count is concerned at this time, both the spacecraft test conductor and Astronaut Alan Bean, the spacecraft communicator in the blockhouse, are checking the environmental control system of the spacecraft with the prime pilots, Astronauts Frank Borman and Jim Lovell. In the meantime, outside the spacecraft, the technicians and crews are getting ready to depart the white room in preparation for clearing the room so we will be able to lower the erector some 40 minutes from now. All systems still looking good. The doors on the spacecraft were closed some 4 to 5 minutes ago and they were tightened and the torque was checked to insure that all was proper with closing the hatches. Everything still looking good coming up on T-78 minutes and counting. This is Gemini Launch Control

END OF TAPE

This is Gemini Launch Control. Coming up on T-69 minutes and counting. Mark! T-69 minutes and counting. All systems still looking good on our countdown. We are still making our major checks at this point in the count with the two prime astronauts in the Gemini 7 spacecraft. At the present time we are making checks of the environmental control system within the spacecraft. We are making sure that the spacecraft has been properly purged and we had a report just a few minutes ago that both Borman and Lovell now are on 100 percent oxygen within the spacecraft itself. Our countdown continues, no known problems at the present time, we have not had any holds up to this time. All systems looking good. T-68 minutes 15 seconds and counting. This is Gemini Launch Control.

END OF TAPE

Good afternoon, this is Gemini Control, Houston. The red flight team under the direction of Chris Kraft have been on their consoles now for the last 90 minutes while during the progress of this countdown. The crew at this time is going methodically through their preflight check list, looking at every gage, pulling every switch, some 300 in all in the spacecraft. Around the world, our situation could not be greater. All of the 22 sites report they are ready to support the mission. They say their equipment is ready and functioning completely satisfactorily. We have talked with the prime recovery ship parked out on Bermuda. They report their winds about 12 knots, ceiling of 2500 feet, scattered clouds, visibility 10 miles and soft swells about 7 feet high. In the past 30 minutes we have completed a communications check with all our stations around the world. The stations came through loud and clear with one exception the range tracker parked out off the coast of South America. Their transmissions were a little broken but readable. All in all, a very green status at this time. This is Gemini Control, Houston.

END OF TAPE

This is Gemini 7 Launch Control. T-49 minutes and counting.. Everything satisfactory at this point. All systems looking good, both in the spacecraft and the launch vehicle. We have just completed a very important test with the guidance command system in the Titan II launch vehicle. This was monitored by astronauts Frank Borman and Frank Lovell, and Jim Lovell, correction, in the spacecraft. During this test we actually send steering signals to the engines in the launch vehicle and the engines respond by moving briefly right, left in response to the signals being given. This guidance control test has been completed and completed satisfactorily. All systems still looking very good. Coming up on T-48 minutes and counting at 42 minutes past the hour. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control T-39 minutes and counting. MARK T-39. All systems still going well at this time. Just several minutes ago, we have gone through our final status check of all elements in the Gemini 7 countdown to determine if we are ready to lower the erector on Launch Complex 19. As they have done all morning long in this countdown, they came back and gave themselves in a Go condition in each case. We are still go on the mission, and we are go for lowering the erector on Launch Complex 19 some 3 minutes from now. All systems still looking good. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. Now at T-35 minutes 33 seconds and counting. The erector is being lowered on Launch Complex 19. The lowering of the 138-foot erector started about 1 minute ago. The prime pilots, Frank Borman and Jim Lovell were informed shortly before and they confirmed, during the early movement, that the erector was coming down. The prevalves on the Titan II launch vehicle oxidizer system within the first stage also have been opened. This permits the oxidizer, the nitrogen tetroxide, to condition the lower part of the engine system prior to launch. The other prevalves for the fuel system are open a matter of seconds prior to launch. Our erector is coming down, all systems going very well on the Gemini 7 countdown at the present time. T-34 minutes 38 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-29 minutes and counting on the Gemini 7 mission. All systems still looking good. We have confirmation now that the erector on Launch Complex 19 is down and we are ready to proceed during the final phases of the countdown. At the present time in the spacecraft, atop the 109 foot vehicle, Astronauts Frank Borman and Jim Lovell are testing out their UHF communication system with the test conductor in the blockhouse. All systems looking good. The pad has been cleared. T-28 minutes 22 seconds and counting.
This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. T-24 minutes and counting. T-24. We continue to go smoothly both at the blockhouse and the spacecraft at Launch Complex 19 and the Mission Control Center in Houston. All systems still looking good. At the present time astronaut Jim Lovell, the pilot for the Gemini 7 mission, is completing some power checks in the spacecraft with the blockhouse. Some final guidance tests are being conducted with the launch vehicle. Both of these activities going well. All systems still looking good. We have confirmation that our weather will remain good for launch time here and around the track for the Gemini 7 mission. Now T-23 minutes 17 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control coming up on T-19 minutes, mark, T-19 minutes and counting on the Gemini 7 flight. Our countdown continues to go along smoothly as both in the spacecraft and in the blockhouse we prepare for an important test coming up in several minutes. This is the static, a brief test firing the 25-pound thrusters in the spacecraft orbit attitude and maneuvering system. A series of these thrusters will be fired in bursts of one and a half seconds to insure that the orbit attitude and maneuvering system is functioning properly. This is a test also to bleed the lines, the fuel lines within the so-called OAMS system to be sure that they will be ready for use after shortly after liftoff, actually when the spacecraft separates from the launch vehicle. We are going through some changes of gauges and dials concerned with the system in the spacecraft with Astronauts Frank Borman and Jim Lovell and we are also gearing up to monitor the test from the blockhouse. This is Gemini Launch Control, T-17 minutes, 55 seconds, and counting.

END OF TAPE

This is Gemini Launch Control, T-14 minutes and counting. All systems still looking good. Just a few minutes ago we completed tests of the spacecraft orbit attitude and maneuvering system. We fired one and a half second bursts from the thrusters around the base of the spacecraft. We went round in a clock-wise fashion two or three times. From all those observing they all agreed that it was a satisfactory test and we are now proceeding. As far as the launch vehicle are concerned, since the T-35 minute mark in the countdown most of the various sequences and events are occurring automatically through the sequence of systems. They have several manual functions but the great majority are in automatic sequence down from 35. Our static firing is complete. We are in the process of making some final telemetry checks with the Air Force Eastern Test Range Tracking System at the present. T-13 minutes and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control coming up on T-8 minutes and counting. Mark, T-8 minutes and counting on the Gemini 7 mission. We have just gone past one of our major milestones during the final phases of the countdown, that is at the 7 or 8 minute mark when we make a final check of all elements in the countdown to insure that we are in a go condition. In the countdown manual itself we ask for a green light and we did receive a green light from all elements that reported go. All systems still going very well. Our wind in the launch area picked up a little bit - about 10 knots, however, that is not expected to have any effect on the mission or any effect on the condition of the pad following launch. We are now at T-7 minutes and 14 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control. T-5 minutes and counting. T-5. We have just completed another status check at the full $5\frac{1}{2}$ minute mark in the count. This is a communications check of all elements. This also came out in a go condition. Everything still looking good as we primarily in the blockhouse .....this time while the automatic sequencer for the launch vehicle does most of the work..... primarily monitoring at this point. Astronauts Frank Borman and Jim Lovell reporting from the spacecraft that all is going well in the Gemini 7 spacecraft. Now T-4 minutes 20 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini launch control. T-3 minutes and counting. T-3. Everything is still looking good from the blockhouse and at the Mission Control Center in Houston at the present time, as we continue our final checks of both the launch vehicle and spacecraft. Some final guidance checks with the launch vehicle are going on at the present time and we are still getting good reports and we have the green lights on in the consoles. Everything is looking good T-2 minutes and 33 seconds and counting.

END OF TAPE

This is Gemini Launch Control. T-1 minute 41 seconds and counting. The last several minutes of the countdown all conditions still looking good. Now T-90 seconds and counting. T-90 seconds and counting. As we proceed down to the final moments of the countdown the launch vehicle first stage engines will ignite and build up some 430 000 pounds of thrust. When 77 percent of this thrust is reached, the launch vehicle is released from the pad. All this takes a matter of seconds, some $2\frac{1}{2}$ to 3 seconds. T-1 minute and counting. T-1 minute and counting. T-50, T-40 seconds and counting. The astronauts have been alerted that the prevalves on stage II that permit the oxidizer to come down into the engine compartment will be open. T-30 seconds and counting. T-25, T-20, 15, T-10,9,8,7,6,5,4,3,2,1,0 - Ignition!

Engines start. We have a lift-off at 30 minutes and about 5 seconds after the hour, plus 10 seconds. Range safety says they're go! Looking good at 20 seconds. Roll program is in. Pitch program is in. Guidance says we have proper roll and pitch. Both systems are go. 40 seconds into the flight and the vehicle has now crossed the beach. Coming up on 60 seconds. Mark! Velocity of the vehicle is 1300 miles an hour and it's pulling 1.9 g's. Guidance affirms we look good. Dr. Berry is go. One minute 30 seconds. One minute 40 seconds thrust very slightly low as much as about 2 percent low, quite acceptable. Coming up on 2 minutes. Mark 2 minutes. Our velocity is 3600 miles per hour, the chief horses 3.3. The crew reports they're go for staging which should occur in a very few seconds. Guidance says looks good for staging. Two minutes 30 seconds. We've got staging, stage II thrust looks good. Two minutes 50 seconds. Borman reports the radio guidance system has locked on at 3 minutes into the flight. Velocity 7100 miles per hour. Three minutes 30 seconds. All of the flight controllers here passing

along good flight reports. The words don't vary much at all. They all say looks good, looks good, looks good. Coming up on 4 minutes. Four minutes into the flight. Velocity now built up to 9200 miles per hour. Kraft's alerting the controllers to stand by for a status check here. He has covered some 10 flight control positions in about 10 seconds, each reported go. Capsule Communicator Elliot See is passing the go to the crew at 4 minutes 25 seconds into the flight. Communications are a little noisy coming from the spacecraft. That's not unusual during the launch phase. G force is building again up to 3.7. Our velocity 12 800 miles per hour. We are standing by for .8 which is the achievement of 80 percent of the desired velocity to put this 8000 spacecraft into orbit. Five minutes 20 seconds, Elliott See says you're right down the slot, Gemini 7. We're standing by for second stage cut-off. We've got it. SECO! At 5 minutes 40 seconds. At the moment of second stage cut-off, the g forces reach a max of 7.2, flight director says we are go in the mission at 6 minutes into the flight. The flight controllers here see the spacecraft telemetry showing thrusting, getting off the booster. Borman reports he has the booster in sight and it looks good. Seven minutes into the flight. The crew reports that the booster is venting. They can see gas escaping from it. They're probably a very few feet away from it. The plan was to thrust very slightly off the booster, turn around, and then retard their thrust and go back toward the booster to stay within a 100 or so feet of it during this early part of the flight. And now Elliott See has just passed up to the crew the size of the first cut on this orbit of Gemini 7. It is as follows: 87 miles perigee, 178 miles apogee. Those are nautical mile values. 87 miles perigee, 178 miles apogee. Eight minutes 10 seconds into the flight. The communications still somewhat broken, more broken than most of the Gemini flights in the past, but readable. Elliott See has just

advised the Gemini 7 spacecraft that they're already cleaning off the pad down at the Cape, getting ready to put Wally Schirra and Tom Stafford's booster and vehicle out there.

At 9 minutes into the flight our controller here advises that they've used about 15 pounds total fuel so far in adjusting so they can fly a formation with their launch vehicle for this early part of the flight. We have the tape for you of the conversation during the launch phase. We, as I say, it's quite rocky and a little spotty, but if you listen closely, I think you can pick up the voices of Jim Lovell and Frank Borman. We'll play that tape for you now.

CAP COM	6,5,4,3,2,1,0 - Ignition! Lift-off!
Spacecraft	.....
CAP COM	Real good
Spacecraft	.....
CAP COM	Roger, off
Spacecraft	.....
CAP COM	Roger, pitch. 15 seconds
Spacecraft	.....
CAP COM	Roger
Spacecraft	.....
CAP COM	Roger, 5.6 on the cabin.
	1 plus 40
CAP COM	Roger, mode 2
Spacecraft	.....
CAP COM	Roger, update.
Spacecraft	.....
CAP COM	This is looking real good here Gemini 7.

Spagecraft	Roger, Stage II engines ....
CAP COM	Roger, stage II go.
Spacecraft	..... temperature 6
CAP COM	Roger, update
Spacecraft	Staging
CAP COM	Roger, staging
Spacecraft	Guidance initiate, has 6.2 ..... don't be late.
CAP COM	Roger, guidance initiate and fuel cell delta p lights.
Spacecraft	Delta P light out
CAP COM	Roger, Delta P light out.
	Guidance is looking still very good here Gemini 7.
Spacecraft	.....
HOUSTON	Houston to Pilot.
CAP COM	Gemini 7 Houston you're go from the ground
Spacecraft	.....
CAP COM	Roger
Spacecraft	.....
CAP COM	Guidance is right on, Gemini 7.
Spacecraft	.....
CAP COM	Stand by for point 8
Spacecraft	.....
CAP COM	Point 8, V over VR. Right down the slot, Gemini 7.
Spacecraft	SECO!
CAP COM	Roger, SECO
Cap COM	Gemini 7, Houston you are go
Spacecraft	Roger, a good sim.
CAP COM	That's the best sim we've had.

END OF TAPE

This is Gemini Control at Houston 14 minutes 9 seconds into the flight. The crew has reported they have completed their postinsertion checklist. All the equipment is stowed or unstowed as it should be. We lost signal with the Bermuda station 41 minutes after the hour, which was the expected time. The fuel cell is operating quite satisfactorily the crew reports. All in all, Jim Lovell summed it up by saying, "It's the best sim we've had." His reference was, of course, to a simulation. We have been running them now for several months. The experiments load on these two starts right off at 20 minutes after the hour. They are 20 minutes into the flight, excuse me. They are to start the first of their 20 odd experiments. They will be making measurements infrared measurements on the booster, which they are flying in formation with. They will continue these measurements some 30 minutes until they reach the Carnarvon station, where they will have a major check of their spacecraft and all its systems and their operation. This is Gemini Control Houston.

END OF TAPE

This is Gemini Launch Control at the Cape. We have not been able to get a team out to the launch pad yet to particularly assess the damage created by the Gemini 7 lift-off. However, we have a report from the blockhouse that from the pad cameras (several of the pad cameras that have been chained on the base of the pad) we see nothing abnormal as far as the pad damage is concerned. There doesn't seem to be any particular problem that we can see with the cameras that would give us any difficulty. We should know within an hour or a little less than that when the damage assessment crew makes its report on our final status. Astronauts Wally Schirra and Tom Stafford, who will be making the Gemini 6 flight some 9 days from now if all goes well, observed the launching from the roof of blockhouse 37, which is located north of the launch pad on 19. As soon as we do get further reports on the pad damage, they will be brought to you. This is Gemini Launch Control.

END OF TAPE

This Gemini Control Houston, 29 minutes 15 seconds into the flight. Within the last 10 minutes, as the spacecraft passed just south of the Canary station, the crew noticed a drop and so did the ground station in our oxygen source pressure to the fuel cell. The drop continued rather sharply, and when it got down to about the 100 pounds per square inch pressure level, the crew used the cross feed valve. This is a valve which was installed since the flight of Gemini 5 when we had trouble in the same circuit. It permits the oxygen which is in the primary oxygen breathing tank to be cut in as a source pressure for the fuel cell. This worked very effectively. It brought the pressure up to the acceptable level of about 250 pounds. The crew also reported that they had separated from the booster and performed a 20-second burn, and they were checking infrared measurements from the booster as the flight plan instructed them to do. We have the tape conversation first from the Canary Station and then remoting through the Kano, Nigeria station, and we are prepared to play that tape for you now.

FLT Canary, Houston Flight

CYI Go ahead flight

We want to change the radiator to flow and the adapter C-band beacon time to 37 minutes instead of 35.

CYI That's 37 minutes

FLT That's affirmative

FLT Canary, Houston flight

CYI Go ahead, flight.

FLT You recognize no communications check your site this time

CYI That's affirmative.

S/C garbled

CYI Go ahead Houston Flight

FLT The one thing I wanted to make sure was the C-band adapter. That is the reason we changed the time is because of interference at Victoria

CYI Go ahead flight

FLT The C-band adapter beacon to switch at 37 was the information we wanted to get to the spacecraft.

CYI That's the C-band adapter?

FLT That's affirmative

CYI garbled

S/C garbled

CYI 1 7 0 on both?

S/C It looks like it here

CYI Delta P light on both cells?

S/C garbled

CYI Houston Flight

FLT Have him bring on the auto heater on the fuel cell 02 and raise the pressure to about 250 on your gage, I don't know what that reads on his gage.

CYI All right, stand by

FLT Give him his gage reading.

CYI Okay

S/C

CYI That reading has about 200 on board

S/C garbled

CYI How do you want that . . . .

FLT 250 on the ground and 200 on his gage

CYI 250 on the ground, roger.

S/C garbled

FLT Canary, Houston Flight

CYI Go ahead, flight

FLT Your data coming in is tagged Agena. That's wrong, it should be tagged Gemini.

CYI Roger

FLT This is Houston Flight. We would like for you to refly that data if you can tag it right.

CYI Roger

CC Gemini 7, Houston, we are coming through to you now, how do you read?

S/C garbled

CC Roger, loud and clear, we are standing by for your burn.

S/C We have completed the burn . . . garbled

CC Roger, Gemini 7

S/C Garbled

CC Roger, still another fuel cell delta P light.

CC Do you see the . . . pressure coming up at all yet?

S/C garbled

CC Gemini 7, Houston, would you give us the time of your burn.

S/C We had our burn at 23:07

CC 23:07?

S/C 23:17

CC Roger, 23 + 17

S/C 2 zero seconds

CC Roger, 20 second burn.

CC Gemini 7 Houston. We would like you to use the cross feed valve to bring the O_2 pressure up.

S/C garbled

CC Roger

S/C . . . . reading 125 now

CC Roger, 125 pounds

CC Gemini 7, Houston. Would you bring the O_2 fuel cell O_2 pressure up to 250 pounds. Then you can turn the cross feed off

CC Gemini 7, Houston. Did you copy?

S/C I tested

CC Did you copy the 250 pound-pressure.

S/C . . . . go to 250 pounds

CC Roger

S/C all the way up there and turn the cross feed off.

CC Roger, I understand that you have 250 pounds and the cross feed is off.

S/C Roger

CC Is the adapter feed lights still off or still on, or has it gone off?

S/C garbled still off

CC Roger

S/C Garbled

CC . . . 37 minutes

S/C Thank you, 37, thank you.

CC Gemini 7, Houston

S/C Go ahead, Houston

CC Would you say again the time of your burn.

S/C garbled

CC Roger, I understand 22 + 17

S/C 20 seconds

CC A 20 second burn.

CC Gemini 7, Houston, Is the D4/D7 going satisfactorily?

S/C garbled

This is Gemini Control Houston again. During the past few minutes, our capsule communicator, Elliot See, has been trying to raise the spacecraft through to Tananarive, but apparently that communication circuit is not working. He broadcasted in the blind and got no message back, but that's not unusual. The communication seemed to be a little rough today. No additional problems. Apparently, that cross feed valve did solve the oxygen pressure difficulty. The pressure climbed back very quickly, responded well. We don't know exactly what the problem was, although we do know

we are very pleased that we have a cross feed valve in this system. Gordon Cooper, Command pilot on Gemini 5, is on the floor here working at the capsule communicator position also and is consulting on this fuel cell problem which he certainly became an expert on during his first six revolutions. This is Gemini Control Houston at 40 minutes into the flight.

END OF TAPE

This is Gemini launch control at the Cape. We are now receiving some reports on our status at Launch Complex 19. The report is the damage is minimal. There is nothing abnormal with the pad damage whatsoever. We hope shortly to have a more specific report on this to cover the various segments of the pad that were damaged. In the meantime the launch vehicle for Gemini 6 has just been moved out of its storage hangar, that hangar AA, the so-called satellite hangar at Cape Kennedy and will be proceeding on its way to Launch Complex 19. As we get more specific reports on the status of the pad we will give them to you. Our understanding now from the blockhouse is that the status is good. We have the normal expected minimal damage on the launch pad. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control at the Cape. We are now receiving confirmation of the fact we announced earlier that our pad damage on Launch Complex 19 is very, very normal. We don't see where we will have any particular problems. We are still checking out the various systems on the pad. We don't see where, at the present time, there will be any situation which would cause an abnormal delay in the preparations for Gemini 6. Talking about the delay which would be as far as pad damage is concerned. We don't have any more problems than we expected out there but we are still continuing our survey. We expect the post-launch conference will begin some 30 or 35 minutes from this time. This is Gemini launch control.

END OF TAPE

This is Gemini Control Houston, 16 minutes into the flight, with the spacecraft over Australia. In a recent conversation with the Australian station, Gemini 7 was given a go for a 17 revolution flight. They were told that their next planned landing area is 17-1. One problem still remains in the fuel cell area. The pilots report that the Delta P light, you'll hear several references to it in the taped conversation, is still on. We have no answer for that problem at this point. It could be just a faulty light. The light is designed to come on when a differential pressure or a pressure out of spec out of tolerance greater than about a half a pound occurs across the membrane of the fuel cell itself. This is the membrane that separates the hydrogen from the oxygen. At present time our best guess is that it is either a faulty light or we're getting a false regulator pressure from one side or the other. The pressure on the oxygen side, as we reported earlier, did recover very nicely when we switched the crossover valve and they drew oxygen pressure from their primary breathing source. The spacecraft has completed its planned power down exercise and they should be approximately 10 miles from their launch vehicle. They will continue in this mode for several revolutions, running as close as a few hundred feet and as far away as 10 miles from that launch vehicle. We have a taped conversation of the Carnarvon pass and we're prepared to play it for you now.

CVN	Blast off team.
SPACECRAFT	Roger, Carnarvon.
CVN	What's you tank pressure? 390 on the ground.

CVN ....Carnarvon Cap Com.

SPACECRAFT ....are we go?

CVN Roger, ECS O_2 tank pressure reads 200 psi. Would you turn your heater off.

SPACECRAFT Roger. ...the heater is off. It is reading 700.

CVN What did you say again, please?

SPACECRAFT Heater off. Everything normal.

CVN The fuel cell O_2?

SPACECRAFT .....fuel cell O_2 tank pressure, once it reached 200.

CVN Turn your heater to the off position.

SPACECRAFT Roger, it's off.

CVN Roger, thank you.

SPACECRAFT And we still have the Delta P light. Do you have any status on that?

CVN Negative, not at this time.

SPACECRAFT OK. We're having dew on the radiator.

CVN Would you turn your evaporator to off.

SPACECRAFT Roger. .....everything normal.

CVN Roger. Gemini 7 we have you go for 17-1. The run-out tape should be on at this time.

SPACECRAFT OK. Again please.

CVN Roger, you are go for 17-1.

SPACECRAFT My.....are open for 17-1.

CVN Roger, we are going to update T_R.

SPACECRAFT Roger.

HOUSTON FLIGHT Carnarvon, Houston Flight.

CVN Go ahead, Flight.

HOUSTON FLIGHT You might tell him we don't have a solution for the Delta P. We either think it's that the rate pressure is not correct and we'll wait and see if the purge corrects that or else it's a false Delta P light.

CVN Houston advises that they do not have a solution for this Delta P light at the present time. They think it might possibly be a rate pressure or a a faulty Delta P light.

SPACECRAFT Roger.

CVN We have your T_R updated. It is in sync with the ground.

SPACECRAFT Thank you. .....D-4, D-7 powering down.

CVN OK. Powering down D-4, D-7.

HOUSTON FLIGHT You might give him his time of liftoff, GMT.

CVN Gemini 7, your time of liftoff was 193003. 19:30:03.

SPACECRAFT Roger.

CVN .....would you tell.....that you C-Band adapter is on and continuous.

SPACECRAFT .....continuous.....

CVN Roger, understand. .....we're standing by for

you main ..... read-outs.

SPACECRAFT Thank you.

....garbled.

SPACECRAFT Go ahead Carnarvon.

CVN ....C-Bands right now.

SPACECRAFT Rog.

CVN Gemini 7, Carnarvon.

SPACECRAFT .....Gemini 7.

CVN Roger, do you have a DDP of a D4D7 separation

.....

SPACECRAFT ..... plus 17.

CVN Roger. Tell me 22 plus 17.

HOUSTON FLIGHT We have that Carnarvon.

CVN .....I guess I missed it. ....Houston, Gemini 7, stand by for fuel cell purge test.

SPACECRAFT Roger.

1A7S, 27 volts, 1B7S, 27 volts, 1C8S, 27 volts, 7A6S, 27 volts, 2B6S, 26.9 volts, 2C6S, 26.9 volts, 2C8S, 26.5 volts.

CVN Roger. We're standing by for a readout on the main batteries.

SPACECRAFT Roger. No. 7 will read 26 volts. Stand by Carnarvon.

CVN Roger. ..... Gemini 7.

SPACECRAFT Roger, four batteries are reading between 22

and 22 and a half.

CVN — Roger, ...between 22 and 22 and a half. You can stretch your power down at one hour per normal flight time.

SPACECRAFT — Roger.

CVN — .....

HOUSTON FLIGHT — Roger, Carnarvon.

CVN — The spacecraft is going out of range.

END OF TAPE

This is Gemini Control Houston. One hour 52 minutes into the mission. During the recent pass across Hawaii and the States the crew reported their Delta P light is still on. The heads are still together here on the ground. We are not overly concerned about it but it's a problem that will bear close watching during this early portion of the flight. The crew also reported sighting at the eastern edge of the States, in fact as they crossed the Antigua area, Lovell described sighting the booster as a brilliant body out in the sun, pretty close to them, a little bit ahead of them and slowly tumbling. Frank Borman also said he could see some fine particles passing in, either above or below him, it was not an intersection type pass, but he could see particles 3 to 4 miles away which appeared to be in a polar orbit.

We have some figures on the cut-off velocities and various angles 30 seconds after second stage separation for you. These figures are based on sustainer engine cut-off plus 30 seconds. At that point the slant-range from the Cape, was 575.7 miles. That's in nautical miles. Our planned value there was 579 miles so we were 3.3 miles off. The inertial velocity at that time was 17586.1 miles per hour, that against a planned value of 17593.6 miles per hour so we were about 7.5 miles low. Our perigee is 87.2 miles, this against a planned perigee of 87 nautical miles, a difference of 2 tenths of a mile. Our apogee 177.1 nautical miles versus a planned perigee of 183. A difference of 5.9 miles. Our orbital period in reference to an inertially fixed period is 89.23 minutes against a planned value of 89.30. Our periods in turns of Cape-to-Cape passes is approximately 95 minutes. Our inclination is 28.89 degrees versus a planned inclination of 28.87 degrees.

Our lift-off time was 30 minutes and 3 seconds after the hour. It would be in Central Standard Time 130:03. We have ready for you, we have delayed because of the Press Conference at the Cape, we are prepared to play for you now a tape conversation between Gemini 7 and the Hawaii Station. Here's that tape.

CAP COM Gemini 7, Gemini 7, Houston CAP COM. Do you read?

CAP COM Gemini 7, Houston CAP COM. Do you read?

CAP COM Gemini 7, Gemini 7, Houston CAP COM. How do you read?

S/C Gemini 7 Houston read you weak but clear.

CAP COM Roger, understand you are reading weak but clear.
We are continuing to analyze the fuel-cell light. We expect to have some procedures to analyze it further. We will pass this to you as soon as we are ready, probably over the States.

S/C Roger, understand.

CAP COM Gemini 7 you are very weak here. Would you confirm that the Delta P light is still on?

S/C This is Gemini 7. The Delta P light..... is still on.

CAP COM Roger, understand. The light is still on.

KANO .... KANO

CAP COM Roger, Hawaii

CAP COM Roger, Hawaii

HAWAII We're on TM solid. We just had to drop out .....
Gemini 7, Hawaii CAP COM.

S/C Go ahead, Hawaii, Gemini 7

HAWAII How're you doing up there?

S/C Very good except for the Delta P light everything is all right.

HAWAII Ok. You're looking real good here on the ground.

HAWAII I'd like a readout of your ohms propellant quantity.

S/C Roger. Ohms propellant quantity reads 82 percent.

HAWAII Roger. You have increased your station-keeping?

S/C Roger. That's right.

HAWAII Ok.

S/C We separated from the booster here so we're no longer out of sight.

HAWAII Roger. Understand. We'll be standing by if you need anything, podnuh.

S/C Roger, Hawaii

HAWAII A G.e.t. time hack

S/C Roger

HAWAII Ok. Set up 80 minutes for count up and I'll give you a time hack in about 30 seconds.

S/C Roger.

HAWAII Second - 8,2,1 Mark!

S/C Roger. Understand. 80 minutes and we're right on time.

HAWAII Very good.

S/C .....recorded roger 26 minutes

HAWAII Understand

HAWAII All right FT go ahead.

HAWAII Ok Are you getting our C-band data?

CAP COM Stand by one, I'll check. It's .....Hawaii.

HAWAII Ok

HAWAII Drop out 31 we have LOS.

CAP COM Roger, Hawaii.

END OF TAPE

This is Gemini Control Houston, 2 hours 5 minutes into the flight. No additional contacts since the spacecraft left the Antigua area, southeast of the United States. However, we do have the earlier portion of the pass as it started across Guaymas in contact with the Guaymas, Mexico, station and we are prepared to play that tape for you now.

FLT — Flight OK.

SPACECRAFT — Hawaii AFT go ahead.

HAWAII — OK, the fuel cell O_2 tank pressure 521218 is reading 337 psi. Now we haven't got the P light on have we?

SPACECRAFT — Roger. Everything else looked pretty good except I was getting pretty low on DCS signals checkout on quadraplexer. Quadraplexer was holding up real well. No problems.

FLT — Hey Ed I want to check that Delta P bravo bravo 04?

HAWAII — Bravo, bravo 04, afirm.

FLT — OK, I think when we talk Delta P we ought to be more specific.

HAWAII — Alrighty. Flight?

FLT — Go ahead, Ed.

HAWAII — The only thing we've got to say about the Delta P light is you may when you get ready for a purge, when you put your crossover switch to on the light goes out -- the chances are you've got a dead regulator.

FLT — Yeah, I think that's occurred. They've listed

them here the alternatives that could be causing it. There's six of them, all of which have different.

AFT This is Cap Com AFT.

FLT AFT.

AFT OK, making a voice check, I read you loud and clear.

FLT Read you loud and clear.

AFT OK, are you with us on the fuel cell problem we're having right now? That would be would be Delta P light BBO4?

FLT Roger. OK, they're discussing a number of possible possibilities that could cause this situation here in the Control Center and will probably go to the crew with some procedures a little bit later when they get something definite ironed out.

AFT Roger.

FLT OK, we don't have anything special for you this pass.

SPACECRAFT Roger. That's AFT?

AFT Ground here.

FLT OK, you might remind the crew that they have a critical tape dump over Texas this time, that's heads up type pass.

AFT Roger.

END OF TAPE

This is Gemini Control Houston, 2 hours 20 minutes into the flight. During the past 30 minutes, the Gemini 7 crew has been making measurements on various stars, using that very cool infrared sensor which has about 12 to 15 hours to run on it into the mission before it will become inoperative. They have two other sensors which they will use later in the flight for making similar measurements on a wide variety of subjects. We have a brief conversation from the Tananarive station as they passed over it some 5 minutes ago, and we are prepared to play it for you now.

Tananarive, go remote

Tananarive has acquisition

FLT CARNARVON Cap Com, Houston Flight

CARNARVON Go ahead

FLT Are you up with us?

CARNARVON Perfectly.

FLT Okay, we are still cogitating on this fuel cell problem. There are a lot of things that could be wrong with it that would have resulted in flight, and I guess you are thinking of them too, but let me go down the list for you. It could be O_2 regulating low, could be O_2 regulating high, could be O_2 regulator fail to open, and we could be dumping the O_2 as a result of that. We could have a crack in the water separator, and we could have the water valve out of that cell closed, and it could be flooding the cell. Now, there are a number of tests which you probably have been thinking about also, and we are thinking about doing them. Now the first

test we want to run is to see what happens as the result of this purge. It could tell us something about the oxygen regulation just through the purge in the next pass here.

CARNARVON Roger, I understand about the purge.

FLT We are going to do that purge all over the States on this next pass.

CARNARVON Rog

FLT If you guys out there on the range want to give us any other ideas, have at it.

CARNARVON Roger, we're thinking, flight. I would like to offer a confirm that we did go to the power down and come in configuration. We have not received any word that he did.

FLT We assume that he did over your site. You might ask him that. Let us stand by .

FLT That's affirmative, Carnarvon, we were reading with 19 amps here.

CARNARVON Roger

FLT Gemini 7, Houston Cap Com, how do you read?

S/C Garbled

FLT Roger, just checking communications through Tananarive. We weren't able to get you last time. We have no additional information. Stand by.

S/C Garbled

FLT Roger. Is that with the D4 experiment?

S/C Roger

FLT Okay

FLT Space 7, Houston, are you getting a reading on your OAMS gage for the experiment position.

S/C garbled

FLT Understand your fuel cell oxygen pressure decreased below 200 pounds so you have turned the heater back up.

S/C garbled

FLT Is that correct?

S/C Turned it back up

FLT Roger

CARNARVON Carnarvon Cap Com

FLT Go ahead

CARNARVON I would like to confirm you would also like a C-band track .

FLT Stand by. I think what we want you to do on this pass is skin track the launch vehicle, stand by 1. That's affirmative. Skin track the launch vehicle.

CARNARVON GARBLED

END OF TAPE

This is Gemini Control Houston, 2 hours, 36 minutes into the flight. At the start of the Carnarvon pass, about 10 minutes ago that Delta P light that we've been watching very carefully since the start of the mission, flickered out for a few seconds, but then it came back on. So the problem is still with us. We're watching it. It will be watched very carefully during this next pass across the states when we perform the first purge cycle on the fuel cell. That is, we'll flush considerable amounts of oxygen and hydrogen through the cell purging out any build up of chemistry or what ever has gone on within the cell. This is a normal four hour cycle. Three to four hour cycle. It will occur toward the end of the state side pass between, roughly Texas and the Cape. Also, at the end of the state side, roughly at Bermuda and a sweep on south to Tananarieve, the pilots on this next pass, will turn on MSC-2 and MSC-3 experiments. These are respectively flexgate magnatometer that measures the field strength, the earth's magnetic field. And an electron proton spectrometer which looks at the size and the intensity of any electrons, protons encountered in that portion of the Van Allen belt which comes closes to earth roughly at 100 to 150 miles altitude over the South Atlantic. Backing up just a little bit now, we have the tape conversation between the Gemini 7 crew and the Carnarvon station which the spacecraft just passed over and we're prepared to play that tape for you now.

Houston Flight — Go ahead Flight Carnarvon

You may advise the crew that there was very little damage to pad 19 and they're on schedule with the erection of GLV 6.

CNV — Roger

CNV — Carnarvon, Houston Flight

Houston Flight — Go ahead Flight Carnarvon

CNV — Did you understand that he still has all these switches in a continuous mode?

Houston Flight — Negative, I did not understand that.

CNV — O. K. We just thought that was what you were asking. We think they're still on a continuous mode.

Houston Flight — Roger

CNV — The platform and all good stuff is powered down.

Houston Flight — Roger, what time will be go to command.

CNV — According to the flight plan about four hours.

Houston Flight — Roger. Carnarvon, I think we're mixing one up date on a flight plan here somewhere.

CNV — It could be. I don't think so it's on page 17 of the Gemini/7 flight plan. Powered on spacecraft see adapter command tm to command, and all the way down the line. The first power down was he brought the platform off AC powered .....secondary pumps off and B pumps on.

Houston Flight — O. K. We have that one. We had acquisition a while ago, he was in the command position.

CNV — Yes, but that was because he had misunderstood what we had wanted and he had just inadvertently put it to command when we were trying to tell him to go there for the pass over Patoria.

Houston Flight — Roger, understand.

CNV	We'll let you know -- well, you'll probably get it but we'll let you anyway. We're going to see what Tanarieve had on the TN frequency last pass.
Houston Flight	Rog
CNV	Tanarieve track 230.4.
Houston Flight	Rog, understand
CNV	Roger TN5.
Spacecraft	This is Gemini 7.
CNV	Roger we have you and you're looking good here. Also, we'd like to tell you we had very little damage to Pad 19 and they're on schedule with 6 vehicle.
Spacecraft	Roger Carnarvon, thank you. For your information our Delta P light blinked out at 2 minutes and 22 seconds but then it came right back on again.
CNV	Roger, understand
Houston Flight	Did you copy that flight?
CNV	Roger 2 22.
CNV	This Carnarvon, Gemini 7
Spacecraft	Go ahead Carnarvon, Gemini 7
CNV	Will you turn your quantity read switch to the 02 position?
Spacecraft	Roger. 02 RF 99.9 percent and 250 pounds.
CNV	Roger Copy, 99.9 250 pounds.
Spacecraft	Roger, how does it look to you?

(garbled for quite a few lines)

CNV — Please return to the off position 7.

Spacecraft — (garbled.....) but it's off now.

CNV — Roger, understand.

Spacecraft — Carnarvon, will you check with Houston to see if there's any special/purge instructions on the purge coming up?

Houston Flight — No special instructions, just a normal purge.

CNV — Roger, there's no special instructions, just a normal purge.

Spacecraft — Very well, thank you.

Houston Flight — Copy flight on the 99.9 250 psi, Carnarvon.

CNV — Go ahead

Houston Flight — Did you receive that summary?

CNV — Stand by one. It's affirmative and it looks good.

Houston Flight — Roger.

CNV — ...skin track on the booster.....

Houston Flight — Roger.

CNV — .....looks good on the ground flight.

Houston Flight — Roger

CNV — .....That's still Baker Baker 04.

Houston Flight — That's Affirm, Baker, Baker 04.

CNV — Roger

Houston Flight — .....less one second.

CNV — O. K.

Spacecraft — .....on the booster.

CNV — Right

Houston Flight	...contact with the spacecraft Carnarvon?
CNV	That's affirmative. It's getting broken now.
Houston Flight	Roger. .....los.
CNV	Also, we lost the command transmitter during this pass.
Houston Flight	Rog.

END OF TAPE

This is Gemini Control Houston. Two hours 58 minutes into the mission. During the recent Hawaii pass the crew was alerted to the fuel-cell purge to be performed during this upcoming pass across the United States. It will be performed over the Texas site. They will also receive an update during the stateside pass on precisely where and when and in what amount they are to adjust their perigee. This is a maneuver which will raise the perigee approximately 20 miles. We'll get a more exact value on that during the pass across the States. Jim Lovell also reported that he had activated the M-1 experiment. These are some cuffs circling his legs. They are cycled 2 minutes on and 4 minutes off and will continue throughout the flight as long as he likes to leave them on, it's a cardiovascular conditioning experiment, similar to the experiment that Pete Conrad performed during Gemini V. We have the Hawaii conversation on tape and we are prepared to play it for you now.

HAWAII CAP COM

CAP COM Go ahead.

HAWAII Roger. On that first pass I sent a real-time TM command on which was off of that C-band beacon on since we weren't receiving C-band track and therefore both of those relays are originally set in the ON condition, so he could possibly be in the command position and we're still getting TM ON as a result of those two commands I sent.

CAP COM Yeah, but his switch position says that he should be in continuous at the present time and then at T+4 hours he'll go to those command positions.

HAWAII Ok. We told him to start his power down at plus 1 hour in accordance with the flight plan and we have no information on what this power-down configuration consists of.

CAP COM Didn't you get, I think there was a DCI against the flight plan, that the change at one hour, it said purge fuel-cells, platform off, AC power ACME, primary and secondary A pumps off and B pumps on.

HAWAII We get ... the only thing we were wondering about, when he goes to the command position, if those relays aren't set he'll still have C-band and real-time TM.

CAP COM Roger, I concur Stu. I think he probably has set those relays, however, I don't think that's a problem Stu, because as soon as the first site acquires after he has powered down at 4 hours we'll get him set back properly.

HAWAII Ok. All it might do is on your power usage you might have a little more power usage than what you figured on. Let's see, where does 4 hours occur?

CAP COM Stand by and I'll give you a hack here.
Just about over Carnarvon

HAWAII Carnarvon. Oh yeah.

CAP COM Does that make you happy?

HAWAII Ok. At that hour we'll send a TX for this next one.

CAP COM Okay. It's affirmative. Four hours would be 1 minute after your acquisition, so you can tell.

HAWAII All righty.

CAP COM Roger, Bud.

CAP COM ... CAP COM, AFT

AFT AFT .....

CAP COM Okay you're coming through loud and clear. We don't have anything special for your pass, uh I'd like to tell you that we're going ahead with the normal type fuel-cell purge over the States this time.

AFT Roger.

CAP COM You got any questions?

AFT Nope.

CAP COM Okay. We're standing by.

AFT Roger.

CAP COM Hi ya Houston flight.

HAWAII Houston flight Hawaii CAP COM

CAP COM What we want to tell him is - we want to start the fuel-cell purge over Texas and that we'll give him the go on it when we want him to start purging, if he's set up to do it and as soon as we get good Texas acquisition of data we'll tell him to go ahead.

HAWAII Roger.

.....Track

CAP COM Roger Hawaii

HAWAII Gemini 7, Hawaii CAP COM

S/C Go ahead Hawaii, Gemini 7.

HAWAII How're you doing?

S/C Very good

HAWAII Okay. We're showing you go down here. We're going to do a fuell-cell purge over Texas and we want you to be ready for it

and they will advise you when they want you to start. They're going to wait until they get good telemetry at that time.

S/C Okay

HAWAII All righty.

S/C Tell them we'd like to have a good star reference so the perigee adjust ..... for number 2.

HAWAII All righty.

HAWAII We'll be standing by if you need anything.

S/C Thanks Hawaii ..... have activated the M-1 experiment.

Hawaii Roger.

..... Affirmative

CAP COM The time that they activated the experiment, please.

HAWAII Okay. Will you give me a time that you activated the M-1?

S/C Roger..... This is 7. We activated M-1 at 2 plus 29 .....

HAWAII At 2 plus what?

S/C 2 plus 39 plus 30

HAWAII Okay, I got that

S/C Hawaii this is 7

HAWAII Go ahead

S/C Our calculations leave us approximately 20 minutes and 10 seconds left on the D4 - D7 recorder.

HAWAII Roger, understand.

CAP COM Hey, what are you reading on that fuel cell and oxygen?

S/C Flight fuel cell oxygen is reading 270.

CAP COM Rog.

HAWAII .....

CAPCOM Roger, Hawaii

HAWAII .....

END OF TAPE

This is Gemini Control Houston. Three hours 20 minutes into the flight of Gemini 7 and during this just completed pass across the United States, we seemed to have put to bed the problem with the Delta P light and the fuel cell. During the pass, a purge of the cell, both sections, was completed. The light remained on except for one period when it blinked briefly off. After analyzing the telemetry from all sides of the cell the people here on the ground are satisfied that the light is inoperative and is just stuck in the ON position. The crew is advised that if they like they could put a piece of tape over the light and Jim Lovell came back with "aw, that's all right, the light makes us feel more at home." The crew is updated on their perigee adjustment burn which will be performed during this revolution. It will be performed out between Tananarive and Carnarvon and it reads as follows. It's to be performed at 3 hours and 47 minutes into the mission. It is to be a 59 ft/sec burn for a duration of 1 minute and 17 seconds. The spacecraft aft firing thrusters will be used - they will thrust in a posigrade direction. During the pass, Elliot See, our Capsule Communicator, asked the crew, among other things, how they like it up there. Borman's reply was "it's great", James Lovell came back with a one word answer. He said "outstanding". The crew also reported seeing the lights still blinking on the booster which is following them around sometimes in front and sometimes behind, maintaining within a 10 mile distance of the spacecraft. Of course, they will leave the booster when they adjust their perigee. We have the tape of the conversation across the states for you and we will play it for you now.

S/C Gemini VII, Roger, and be informed that we have just spotted the booster . . . below- quite a ways off.

Cap Com We copy. Guaymas drop your monitor and Texas go remote.

Texas is remote.

Gemini VII, Houston Cap Com, how do you read me?

S/C Got a pcm solid.

Cap Com Gemini VII, Houston Cap Com, how do you read me?

S/C Loud and clear . . .

Cap Com Roger. We are ready for you to start your fuel cell purge now and you might even have time to - stand by a minute, stand by Gemini VII. . . . now we are ready for you to start your fuel cell purge and you might observe the fuel cell light when you turn the cross-over valve on - we think it may go off at that time.

S/C Roger, understand. . . . purged.

Cap Com Roger.

S/C The cross,over valve . . . on but the light did not go out.

Cap Com Roger

S/C Houston, this is Gemini VII. The booster is just to the right in the outer airglow.

Cap Com Gemini VII, we observe that you have completed your . . negative, we understand that you are still purging.

S/C That's roger. How do you read now Houston?

Cap Com Loud and clear.

S/C Did you get my information about the booster crossing the horizon?

Cap Com Roger, we did. I was ... but someone else heard it. Still got that delta V light?

S/C Rog.

Cap Com Did you get lights during the hydrogen purging?

S/C . . . can't tell, it's been on all the time.

Cap Com Did you get the section 1 light on during the hydrogen purging?

S/C . . . Fuel cell purging complete.

Cap Com Roger, fuel cell purging complete. Any change in the light?

S/C Roger, we reported that it did blink off once - did you get that information?

Cap Com Yes, that was back at 2 plus 22. Roger, no change during the purge then?

S/C Roger - no change at all. Roger.

Cap Com O.K. Gemini VII, I have some other information here for you if you are ready to copy.

S/C Stand by a minute. Go ahead. This is Gemini VII going for information.

Cap Com O.K. VII, are you ready to copy?

S/C Roger.

Cap Com O.K., we have observed that your fuel usage is running a little high. Running about 10 to 15 times high on that fuel usage so minimize the fuel consumption as best as you can. It looks like . . . is a good pointing star for your perigee adjustment and we are double checking that

now. I have an MSC 2 and 3 update. Are you ready to copy?

S/C Roger - go ahead.

Cap Com Time - 3 plus 30 plus 00. Sequence 02, boom extend 6 plus 30 plus 00. Off at 13000. Did you copy?

S/C Roger, we copied.

Cap Com I have your perigee update - perigee adjust maneuver update if you are ready to copy it.

S/C Roger, go ahead.

Cap Com G.e.t. at the burn - 3 plus 47 plus 59. Delta V, 59, burn time 1 plus 17. Pitch 0, yaw 0, thrusters aft, maneuver posigrade. Do you copy?

S/C Roger, we copied.

Cap Com Gemini 7 would you read that back.

S/C Roger, understand. 3 plus 49 - correction, plus 47, plus 59, delta V 59, delta V 1 plus 17, 0, 0 - 0 pitch, 0 yaw, aft thrust, posigrade, and a good aim star is spica.

Cap Com That's right and that's with aft thrusters.

S/C . . roger.

Cap Com Gemini 7, we would also like to know how you like it up there.

S/C It's great.

Cap Com You can cover up the delta V light if it would help.

S/C That's okay, it's making us feel at home now.

Cap Com Keeping you warm, huh?

S/C Just like those . . . . lights . . . warning lights off now.

Cap Com That's a low blow.

Cap Com — Gemini 7, Houston, would you place your ECS quantity - your quantity read switch to the ECS O_2 position for approximately 15 seconds.

S/C — ECS O_2 position.

Cap Com — Gemini 7, Houston Cap Com

S/C — Houston, Gemini 7

Cap Com — The pointing commands for Spica would be 12 degrees pitch up 8 degrees yaw right, so that shows you how close it is for pointing.

Gemini 7, Houston Cap Com, do you read?

Gemini 7, Houston Cap Com, broadcasting in the blind. We have very rough signal with you at the present time. Confirming that Spica is a good pointing reference for you on your burn.

S/C — Roger, understand Spica

Cap Com — Roger, Spica is very close.

S/C — . . . message about the booster lights still blinking?

Cap Com — Negative.

S/C — . . . (noisy)

Cap Com — Say again, Gemini 7, we read you pretty good now.

S/C — I said the booster is in front of us and the lights are still blinking.

Cap Com — Roger, booster in front of you and lights still blinking.

END OF TAPE

This is Gemini Control, Houston 3 hours and 35 minutes into the mission. We have had a brief conversation with the Gemini 7 and our Ascension station - the tape of which we will play for you in just a minute. We have an estimate now on the height adjustment - the perigee height adjustment maneuver which will be performed at 3:47 or in about 12 - 11 minutes from now. Effectively, this should be to raise the perigee to 120 nautical miles, the apogee will remain at 177.1 as we reported earlier. This perigee adjustment is somewhat more than was initially planned, however, it is explained - the mathematics of the orbit and based on a close look at the trajectory indicate that we can save fuel and optimize our situation for the Gemini 6 rendezvous flight some days from now. All in all, quite satisfied with the performance of all the systems up to this point. That delta P light is now accepted as just an error and it probably remain on throughout the flight. We are not concerned about it, we don't think it's causing a problem in the fuel cell. We have the tape of the Ascension pass and we will play it for you now.

Cap Com Gemini 7, Houston Cap Com, how do you read me?

Gemini 7, Gemini 7, Houston Cap Com, how do you read?

Gemini 7, Gemini 7, Houston Cap Com, how do you read through Ascension?

S/C Houston, Gemini 7, how do you read?

Cap Com Roger, read you loud and clear. Based on the results during the purge, we feel that the delta V light may very possibly be erroneous. At any rate, we do not see a problem of a short

time nature. We will continue to observe it. We are not very concerned about it at this point and we would like you to feel the same way.

S/C Thank you for your information and . . .

Cap Com Roger.

END OF TAPE

This is Gemini Control Houston, 3 hours 55 minutes into the flight. The pilots have confirmed that they've completed their perigee adjusting burn. This started at 3 hours and 48 minutes into the flight. It lasted a little more than a minute. Within the last two or three minutes, we've been talking to them through the Tananarive Station. In reporting the progress of the burn, they said that the burn was interupted. And then they threw one of the bigger puzzlers at us. They said that at some point midway through the burn a piece of tape or paper or perhaps a strap, I think it was variously described as any one of those things, was observed hitting Lovell's side of the window. They said it appeared to come from the aft end of the spacecraft, around, and bounce off the window at least once, perhaps twice. It apparently did no damage, but it was observed and certainly was unusual and unexpected. We have the tape of that conversation and we'll play it for you now.

TANANARIVE Tanarive Remote.

Better let me have evaporation.

SPACECRAFT Roger.

CAP COM Gemini 7, Houston Cap Com.

SPACECRAFT Hello Houston, this is Gemini 7.

CAP COM Roger, we're standing by for fuel burn. No special information.

TANANARIVE Gemini 7, Houston Cap Com, we're coming up on one one minute to your burn.

SPACECRAFT Roger.

TANANARIVE Mark one minute to burn.

SPACECRAFT Roger.

TANANARIVE Houston how do you read Gemini 7?

CAP COM Loud and clear, Gemini 7.

TANANARIVE Roger. The burn is completed .....for about 2 seconds.....1717.

SPACECRAFT Roger, 1717.

TANANARIVE Understand you burned for 1 plus 17, the burn was interrupted for a couple of seconds, but you did burn a total of 1 plus 17.

SPACECRAFT Roger, roger, and we hit something out there during the burn.

TANANARIVE Understand you hit something during the burn?

SPACECRAFT Yes, Gemini 7 hit something during the burn. Something came fluttering by the right window. It looked like a strap or a piece of tape or paper.

TANANARIVE Understand that something came by the right window like a piece tape.

SPACECRAFT Roger. We had to stop a couple of seconds there and.....the spacecraft.
Like a piece of strap from the spacecraft

TANANARIVE Gemini 7, did this look like it came from the nose section?

SPACECRAFT No, it looked like it came from behind and it came up and hit the right side on the window.
.....again and I haven't seen it since.

TANANARIVE Roger, and this was during the burn?

SPACECRAFT That's affirmative.

TANANARIVE Roger. Tananarive has LOS.

END OF TAPE

This is Gemini Control, Houston, 4 hours 13 minutes into the flight. The new orbital elements of this Gemini 7 spacecraft are as follows: 120 miles perigee, apogee 174 miles. Both values are nautical miles. We have a tape conversation of the Carnarvon pass which occurred about 5 minutes ago and we are prepared to play it for you now.

CAPCOM Copy that Carnarvon

Carnarvon Yea that's affirmative flight, that sound kinda wild.

CAPCOM Who said that?

Carnarvon This is. . . .

CAPCOM Houston Flight

Carnarvon Go ahead flight.

CAPCOM We'd like to check to make sure that he was SEF during that burn.

Carnarvon Just to make sure that he was SEF.

CAPCOM SEF, sef.

Carnarvon Right

This is Gemini Control Houston. Apparently we have some mechanical difficulties with the tape. We will come back to you when it is repaired. Gemini control out.

CAPCOM You can forget that SEF. We will take a look at the data.

Carnarvon Okay.

Carnarvon We are showing biomed recorder number 2 on here at the ground. We have solid TM on Gemini 7.

CAPCOM Okay we want it off.

Carnarvon Rog, will do.

Carnarvon He's already gone into power-down configuration because we had him turned real time TM and adapter C-band on with RTC.

CAPCOM Rog

Carnarvon Hello Carnarvon CAPCOM

S/C Go ahead.

Carnarvon All roger. We would like to have you turn biomed tape recorder number 2 off, please.

S/C Roger, I just completed.

Carnarvon Roger.

S/C Biomed tape recorder went off at 23 hours 30 minutes and about 30 seconds. Something like that.

Carnarvon Gemini 7, Carnarvon, CAPCOM. Will you give me a readout on your propellant quantity please.

S/C Roger. It reads 67 percent.

Carnarvon Roger. Copy 67 percent.

S/C How about giving us a reading on how we stand on that now, will you please?

Carnarvon Roger, we'll do that.

Carnarvon Standby one here and we will come up with something.

CAPCOM Tell him we will give him an answer over Hawaii and also that we are going to do the critical tape dump over Hawaii and we would like to have him in the proper attitude, rather than Texas.

Carnarvon Okay. What do you have for ACK over Hawaii. Acquisition time. Stand by

CAPCOM Position is, stand by. In GMT its 235454. That 's GMT.

Carnarvon The nominals we are carrying is 42518.

CAPCOM That's close enough.

Carnarvon Gemini 7

We are going to have the critical tape dump over Hawaii instead of Texas and also Gemini 7 you will be updated with your own usage information over Hawaii.

S/C All set roger.

Carnarvon That's all we have for you at this time. We'll stand by.

S/C Roger. Thank you.

CAPCOM How do his systems look Carnarvon?

Carnarvon They look real good on the ground here.

Carnarvon Gemini 7, Carnarvon. We have an indication here on the ground for an oral temperature from the pilot,does he have have his bulb inserted at the present?

S/C This is 7. Negative. No oral temp.

Carnarvon All roger. Thank you.

S/C Hey on that oral temp, it started our relatively low and it rose to 101 degrees.

CAPCOM That's interesting.

Carnarvon Yea it sure is. I don't know whether he's got sunshine in it or something like that.

CAPCOM I think that happened once in the Gemini V mission.

Carnarvon Same thing happened. We are seeing a reading our there and we wondered what. Thats precisely what they determined it was.

CAPCOM Yea. That could possibly be.

Carnarvon Okay we got all that here flight.

CAPCOM Roger

Gemini Control here again. Earlier in the flight you recall that at the start of the second revolution . . spotted. This was in the area of Antigua. Due to a mechanical breakdown we did not have that portion of the tape available for you. This was a line breakdown between building 30 and our news center, building 6. Since then we have dubbed the tape off the master tape here in the control center and we are now prepared to play it for you. It contains references to sighting not only some particles but as well an unidentified object plus the booster. Here is that tape. We will play it for you now.

S/C Gemini 7 here, Houston how do you read?

CAPCOM Loud and clear. 7 go ahead.

S/C Boggy at 10 o'clock high.

CAPCOM This is Houston. Say again 7.

S/C Said we have a boggy at 10 o'clock high.

CAPCOM Roger. Gemini 7 is that the booster or is that an actual sighting?

S/C ...

CAPCOM Say again 7.

S/C We have several, looks like debris up here. Actual sighting.

CAPCOM You have any more information? Estimate distance or size?

C/S We also have the booster in sight.

CAPCOM Understand you also have the booster in sight, Roger.

S/C Yea we have a very very many - looks like hundreds of little particles banked on the left out about 3 to 4 miles.

CAPCOM Understand you have many small particles going by on the left. At what distance?

S/C Oh about - it looks like ah path of the vehicle at 90 degrees.

CAPCOM Roger, understand that they are about 3 to 4 miles away.

S/C They are passed now they are in polar orbit.

CAPCOM Roger, understand they were about 3 or 4 miles away.

S/C That's what it appeared like. Thats roger.

CAPCOM Roger.

CAPCOM Gemini 7, Houston. Were these particles in addition to the booster and the bogey at 10 o'clock high.

S/C Roger

CAPCOM Roger

S/C 7 ah Houston this is 7.

CAPCOM Go ahead.

S/C I have the booster on my side its a brillant body in the sun, against a black background will trillions of particles on it.

CAPCOM Roger. What direction is it from you?

S/C It about at my 2 o'clock position.

CAPCOM Does that mean that it's ahead of you?

S/C It's ahead of us at 2 o'clock, slowly tumbling.

CAPCOM Roger

Gemini Control here again. The reference in that conversation to the third unidentified object, of course, was, or the third object was a bo ey. There were several references to the bogey. This is the unidentified object in addition to particles which appeared to be headed in a polar orbit Heard Frank Borman say plus Jim Lovell discussing the booster. It was Borman who reported sighting the bogey. This is Gemini Control Houston at 4 hours 24 minutes into the flight.

END OF TAPE

This is Gemini Control at 4 hours 35 minutes into the mission. Our spacecraft at the present time is over the Pacific ocean and heading for another stateside pass coming up soon over Gauymas, Mexico. Here in the mission control center we are in the midst of a shift change. Our new flight director is Eugene Kranz. Number 1 flight director, Christopher Kraft and his crew will shortly be leaving this center to attend a press conference. At this time we have a playback of a taped conversation between spacecraft Gemini 7 and our Hawaiian tracking station which took place just a few minutes ago.

Hawaii Ground track in Hawaii.

S/C Roger, Hawaii.

Hawaii TM solid in Hawaii.

Gemini 7 Hawaii CAPCOM

S/C Go ahead Hawaii

Hawaii How are you doing up there?

S/C Fine. Trying to get into a . . . . . Configuration . . . .

Hawaii Okay, we are showing you good here on the ground. I am going to start a tape dump on you and then I'm going to give you an OAMS engine status. So get ready to copy that.

S/C Roger.

Hawaii Are you ready to copy your OAMS data?

S/C Is it much copying involved Hawaii.

Hawaii Roger,. . . .

Up to perigee adjust we show 71 percent actual OAMS remaining That's 71 percent.

S/C Roger, understand. 71 percent. My gage is off by 1 percent.

Hawaii Okay. This is 20 pounds. Two zero pounds of propellant more than nominal predicted for this time. . . . over, perigee adjust two three, 23 ft/sec greater than nominal. We are right right on the profile for actual mission activity.

S/C I understand we are right on the profile.

Hawaii Roger. And your new orbit is one two zero by one seven four.

S/C I understand 120 by 174 and I almost right on the money.

Hawaii There you go.

Hawaii Hawaii

Flight Go ahead

Hawaii Okay, the tape dump is looking real fine.

Flight Ah rogs.

Flight C-band?

Hawaii Good C-band, good telemetry.

Flight Roger

S/C This is Gemini 7.

Hawaii Go ahead Gemini 7.

S/C We had requested a change in the crew status report to delay the one at four 40 are you sure that Houston knows about that.

Hawaii Okay. I will check on that.

CAPCOM Roger. We were expecting the one at four 40. Stand by.

Hawaii Okay

Flight Hawaii CAPCOM, Houston flight.

Hawaii Hawaii capcom.

Flight Tell them that we are still looking for his crew status report over Texas on the copilot here. The command pilot, excuse me.

Hawaii thats the four fourty.

Flight Yea. We were not aware of any change in the flight plan to change that status report.

Hawaii I think he wanted to get it delayed.

Flight Okay, if he wants to get it delayed he will have to give us an idea of about how long and we will reschedule it.

Hawaii Gemini 7 Hawaii.

S/C Go ahead Hawaii, Gemini 7.

Hawaii Are you saying you want to get this crew status delayed until a later time?

S/C Thats roger.

Hawaii About how long do you want to have it delayed?

S/C Actually we don't have all of our exerciser unpacked yet.

Hawaii Okay, we'll pick it up next time around.

S/C We have . . . .

Hawaii Roger, we'll take care of that for you.

S/C Roger.

Hawaii We have completed the tape dump.

S/C I understand . . . .

Hawaii Roger.

This is Gemini Control at 4 hours and 50 minutes into the mission of Spacecraft Gemini 7. At the present time, Spacecraft Gemini 7 is passing over the northern tip of South America on it's fourth revolution around the earth. We have a report from Cape Kennedy and this contains a schedule for the preparations that are going on for the launching of Gemini 6. They will lower the erector at the Cape at between 8:30 and 9:30 p.m. tonight, eastern standard time. The first stage will be inserted into the erector at 11 p.m. eastern standard time. The first stage will be raised in the erector at 2:00 a.m. eastern standard time. The erector will be lowered again at 5:00 a.m. The second stage will be inserted at 6:30 a.m. and will be raised at 9:30 a.m. and at 12 noon, Spacecraft Gemini 6 will be raised atop its booster. At this time, we have some tape conversations that were made between Spacecraft Gemini 7 and the ground tracking stations at Guaymas and in Texas and we will play them back for you now.

Cap Com Guaymas and you are go on the ground .

Gemini 7, Guaymas Cap Com.

S/C Go ahead Guaymas, Gemini 7.

Cap Com Ah, roger. Everything looks good here on the ground.

S/C Ah, roger, thank you, we are in the process of getting ship-shape for 14 days.

Cap Com Roger, we understand and we have nothing for you this time. We'll be standing by.

S/C Thank you.

Flight Cap Com, this is Houston Flight.

Cap Com Go ahead Flight.

Flight Roger, as soon as you get the commands in the C-band and your TX, will you give me a call and then we will pick up the air to ground because we have got some questions to ask regarding this drop.

Cap Com O.K. they are both in

Flight They are both in.

Cap Com Affirm

Flight O.K. and you've got confirmation maps on both of them?

Cap Com I have . . . That's affirm.

Flight O.K. Thank you . . . C-band track at your site, Texas?

Cap Com Flight, we have no C-band here.

Flight Roger, I just got clued in

Cap Com O.K. Texas

Roger, we were not in contact with the spacecraft when we transmitted the TX . . .

Guaymas, Guaymas

What type of TM data are you getting from Texas. Are you getting any help?

Stand by.

. . Texas data, Guaymas

Ah, roger, we are having a lot of drop out - just wondered

whether it was local or in spacecraft TM.

That's . . . pretty good down there.

Roger, thank you.

How's your TM look, Florida?

Solid - it's solid all the way through Texas.

Roger.

Texas, go remote.

Texas remote.

Cap Com Gemini 7, Gemini 7, Houston Cap Com, how do you read, over.

S/C Gemini 7 reads you loud and clear, Houston.

Cap Com Roger, Jim, reading you loud and clear and I've got a few questions on this strap that I'd like to ask you and then we will forget about it. Was it a strap or was it that tape such as a reflective tape?

S/C . . .

Cap Com Roger, Gemini 7, I've got a few questions on this strap you saw at your window during your burn and I'll ask them and then we can forget about it. Was it a strap or was it possibly some tape such as reflective tape?

S/C This is 7 . . . the strap - looked like a strap - it might have been tape came forward about in front of the spacecraft. Just now, we saw the shadow of the tape on the mirrors but earlier in the sunlight the shadow went on by but I can't tell from the shadow what it was.

This is Gemini Control at five hours, 34 minutes into the flight of spacecraft Gemini 7, which at the present time is in its 4th revolution over the earth and is coming up now over the Philippine Islands. We had some voice conversation with the Gemini 7 crew, a remote conversation between the Houston Spacecraft Communicator, Eugene Cernan, here in Mission Control and the flight crew. The voice was being remoted through the Tananarive station and at that time, our Spacecraft Communicator advised the crew that we will make a medical pass on this revolution as the spacecraft comes near the States, and the response from Pilot Jim Lovell said, "OK for the medical pass, but we're still in the process of housekeeping and settling down for a long winter's flight." Now we will play back the voice communication between spacecraft Gemini 7 and Houston Control through the Tananarive station.

TANANARIVE: Go remote.

S/C: Okay Tananarive, remote.

TANANARIVE: Have acquisition.

CAPCOM: Gemini 7, Gemini 7, Houston Capcom, how do you read? Over.

S/C: ...read you loud and clear.

CAPCOM: Roger, we'd like your adapter C-band to Command.

S/C: Unreadable.

CAPCOM: Roger. And how does a medical data pass on the Command Pilot next pass over Stateside? Will that be too soon? Gemini 7, Gemini 7, we'd like medical data pass on the Command Pilot on the next pass over Texas. How does this sound? Over.

S/C: It's fine by us.

CAPCOM: Roger. I'd like your adapter C-band back to continuous until an elapsed time of 05:25. Over.

S/C: Roger. Adapter C-band is on continuous until 05:25.

CAPCOM: Roger. And then you can go back to Command.

S/C: Roger.

CAPCOM: I didn't understand your reply. We'd like to schedule a medical data pass on Frank next pass over the States. Over.

S/C: Unreadable.

CAPCOM: Roger. I understand. We'll nominally schedule it for Texas on the next pass and if you can't hack it, we'll reschedule it.

S/C: Roger. We're still in the process of getting settled down for a long winter's flight.

CAPCOM: Roger. We know.

That was voice communication between Spacecraft Communicator Eugene Cernan here in Mission Control and the flight crew of Spacecraft Gemini 7 which is now over the Philippine Islands at 5 hours and 39 minutes into the mission. This is Gemini Control.

END OF TAPE.

This is Gemini Control. Spacecraft Gemini 7 is now passing over the Pacific Ocean and very shortly will come up on the Hawaiian station. A few minutes ago, as Spacecraft Gemini 7 was within voice range of the Coastal Sentry Tracking Ship, we had conversation with the crew. This was a data pass and we will now play back that tape for you.

S/C This is Gemini 7 - go ahead.

Cap Com Ah, roger, what's your status as far as being ready for your medical data pass?

S/C . . just a second - I think we will be ready.

Cap Com O.K. we have a medical data pass scheduled for the pilot at Hawaii this trip - Hawaii's acquisition is 6 hours 0027

S/C . . . Houston . . . want us to do a . . . stand by with status over Texas. Over.

Cap Com I'll check. That's affirmative.

. . . want us to do it on the pilot over Hawaii also?

Cap Com That is right. Pilot over Hawaii as you read them. The Command Pilot over Texas at an elapsed time of 6 hours and 15 minutes.

Roger, Flight. Gemini 7, roger, you have one on the pilot for Hawaii and the command pilot at Texas at Texas acquisition time is 6 hours and 15 minutes.

Roger, understand

CSQ Ah Roger. I would like to also know if you have made plans for your sleep periods.

S/C Ah, Roger, we're giving it consideration . . .

CSQ Roger. I have a map update when you are ready to copy.

S/C Gemini 7 ready to copy.

CSQ Roger. Title is "Node time 05 41 24, remarks rev 4, 115.0 east 13 hours 45 minutes 35 seconds right Ascension. Do you copy?

S/C . . . roger, copied.

CSQ Now, would you verify your cryo gaging switched off. Quantity read off.

S/C This is 7, we're planning a tape dump at this time but will turn it off early.

CSQ Roger. Flight, did you copy off.

Flight Affirmative.

CSQ . . . LOS, Flight.

Flight Roger, roger, CSQ.

That was taped voice communication between the Coastal Sentry tracking ship and spacecraft Gemini 7.

This is Gemini Control 5 hours and 58 minutes into the flight of Gemini 7.

END OF TAPE

This is Gemini Control at six hours, and 19 minutes into the flight of Spacecraft Gemini 7. At this time our spacecraft is approaching the northwest coast of South America on its fourth revolution over the earth. A few minutes ago as the spacecraft passed within voice range of the Hawaiian tracking station, we had conversation between that tracking station and Gemini 7 crew, and at that time, our flight surgeon at Hawaii had a medical data pass on the pilot, Jim Lovell. He got a good blood pressure. Lovell did an exercise period, and this was followed by another blood pressure check. Jim Lovell also gave us a food and water report. He reported there was no food intake on the part of either of the crew of Gemini 7. He said that the command pilot had taken four ounces of water, and that he himself had two ounces of water since the flight started. At this time, we will play back the taped voice communication between the Hawaiian tracking station and Spacecraft Gemini 7.

CAP COM Gemini 7, this is Hawaii Cap Com.

S/C Roger, Hawaii.

CAP COM Gemini 7, Hawaii Cap Com.

S/C Go ahead, Hawaii.

CAP COM OK. We've got that valid oral temp. Standing by for your blood pressure.

S/C Roger.

CAP COM I'll be transmitting you a TX here shortly, so you're going to get a DCS light.

S/C Thank you.

CAP COM ..... intermittent TM. Haven't locked up yet.

FLIGHT Roger. How did you know you had a valid oral temp yet?

CAP COM Say again.

FLIGHT If you had intermittent TM, how did you know you had a valid oral temp?

CAP COM We could get it good enough that way, Flight.

FLIGHT I'm sorry, Hawaii.

S/C Hawaii, Gemini 7. Our fuel cell Delta P light went off and stayed off for approximately ten minutes or five minutes and then came back on.

CAP COM OK. ..... scale. Tell me what time it went off.

S/C Off at 5:57 and back on at 6:01.

CAP COM Roger. Got it. We copied that. Stand by for surgeon. We have a good blood pressure. We're standing by for your exercise on your mark.

S/C Roger. I will commence the exercise at this time. Mark. Stand by for blood pressure.

CAP COM Up at full scale. We have a good blood pressure. Standing by for your food and water report.

S/C Roger. Stand by. This is 7. No food. The command pilot -- four ounces and the pilot -- two ounces so far.

CAP COM Roger. OK. We can approve all that. You said that the light was off from 57 to 014 minutes?

S/C That's the approximate time. Roger.

CAP COM OK. Thank you. You did get the DCS light, didn't you?

~/C Affirm.

CAP COM OK. C-Band loss. ..... Hawaii.

FLIGHT Roger, Hawaii.

That was taped voice communication between Spacecraft Gemini 7 and the Hawaiian tracking station. At this time Spacecraft Gemini 7 is about to start its fifth revolution over the earth, and as it passes through the South Atlantic region where the Van Allen radiation belt dips close to the earth's surface, the spacecraft will initiate experiments MSC2 and MSC3. These are MSC2 -- an external measurement of the radiation in this region; and MSC3 is measuring the radiation inside the spacecraft. Both of these experiments are for gathering data which may be helpful on future spacecraft flights. This is Gemini Control.

~ND OF TAPE

This is Gemini Control at 6 hours and 34 minutes into the flight of spacecraft Gemini 7 which at the present time is approaching the east coast of South America on it's fifth revolution around the earth. A few minutes ago, as the spacecraft passed within the range of the Texas tracking station at Corpus Christi, our flight surgeon attempted to get a medical data pass on the command pilot, Frank Borman. Due to an equipment difficulty at the Corpus tracking station, the data was not fed into MSC here at the Control Center and we did not receive the medical data pass. This will be attempted again very shortly as the spacecraft Gemini 7 passes over the Rose Knot tracking ship which is located off the east coast of South America. We will now play back for you the voice tape - remote voice - from Mission Control in conversation with spacecraft Gemini 7.

Cap Com — Gemini 7, Gemini 7, Houston Cap Com. We have a . . . give us a blood pressure and stand by for surgeon.

S/C — . . . give a blood pressure, Houston.

Cap Com — Negative - no blood pressure yet.

S/C — Houston, Gemini 7, are you receiving the blood pressure?

Cap Com — Gemini 7, this is Houston surgeon. We are not receiving your blood pressure.

S/C — . . . . not pumped up at all?

Cap Com — That's negative.

S/C — It's pumped up - now pumped up full scale.

Cap Com Roger. We are not receiving it.

Cap Com, this is Houston flight. Do you still see TM data down at your site?

Cap Com Roger and also we have that blood pressure at full scale - we had it at full scale.

S/C Houston - Gemini 7 - we are going on with the exercise. Maybe you can . . . blood pressure somewhere else.

Cap Com Okay, Texas, if you receive the blood pressure full scale, why don't you take it down there. Do you have a surgeon?

Negative - no surgeon. Did have it full scale, it's down again now, I think.

Okay.

S/C Houston, Gemini 7 here, are you ready for the exercise?

Cap Com Gemini 7, Gemini 7, we had a TM drop out problem. We'd like to try this again over the RKV if you will.

S/C Roger. You don't want the exercise . . . right . . .

Cap Com Negative on the exercise. We'd like to start the crew status report again over RKV.

S/C Okay, give me a mark will you?

Cap Com Roger, will do.

Gemini 7, Houston, RKV acquisition 6 plus 35.

S/C Roger, thank you.

Cap Com Roger and the crew status report from the. . . remains at three.

S/C Thank you.

Cap Com Gemini 7, Gemini 7, time at the RKV is more like about 6 plus 32 - 6 plus 32.

RKV Cap Com . . .

Go ahead RKV

A few items - a medical data pass on the command pilot, have got the crew to give us some C-band track over Pretoria. That's 0646 to 0700.

. . . you're on?

. . . excuse me. The times are 6 hours and 46 minutes to 7 hours 00 minutes ground elapsed.

Ah, roger.

Cap Com surgeon.

That was voice taped of the voice conversation between the spacecraft Gemini 7 and Mission Control Center here in Houston remoting the voice through the Corpus Christi tracking station. This is Gemini Control at 6 hours and 38 minutes into the mission of Gemini 7.

END OF TAPE

This is Gemini Control at 6 hours and 43 minutes into the mission of spacecraft Gemini 7. Our spacecraft has just passed out of voice communication range with the Rose Knott tracking ship of the east coast of South America and we will playback for you now the taped communication, voice communication between the spacecraft and that tracking ship.

RKV CAPCOM

S/C Alright RKV CAPCOM

RKV Roger. Our signals are green. We would like you to turn on the C-band beacon for track at Pictoria and a lapse plan of zero six four six and turn it off at zero seven **two zeros.**

S/C Stand by. Turn the C-band on at zero six four six and off at zero seven zero zero.

RKV Roger, Roger.

S/C How about a blood pressure .

RKV Roger. You can start pumping the cuff up.

RKV RKV, Houston Flight.

Flight Okay

RKV Any instructions to pass up to the crew.

Flight Okay. Towards the end of your talk you can find out what their intentions are in beginning a sleep period.

RKV Roger will do.

Flight We have your pressure and it is fine.

RKV Okay this is surgeon. Let's have your exercise.

Garbled

CAPCOM I believe someone has their mike open out there.

RKV Okay flight I will get all that squared away.

S/C Exercise complete.

RKV Can I have your blood pressure again?

Okay Gemini 7 your cuff is full.

Garbled - We have your bloodpressure and do you have a water and food report for us?

S/C Command pilot 3 ounces of water since Hawaii - garbled - Pilot 2 ounces - garbled.

RKV RKV Gemini 7 Keep your C-band on at 36.

S/C That's adapter C-band. Okay, thank you.

RKV Turn it back to command position. Turn it back to command and at zero six four six put it back to continuous.

S/C Roger, will do.

RKV Do you have any idea what you plan on doing about your sleep period?

S/C We are going to eat a meal and then we are going to sleep.

RKV Okay

S/C garbled

RKV Acquisition RKV

S/C Okay flight about 45 seconds.

RKV Okay still looking good.

S/c Roger

RKV Okay. Blood pressure up there?

S/C . .

RKV Okay

S/C . .

RKV Why

S/C A lot of care went in.

RKV Yes somebody out there was keyed to your sight. We heard them back here.

S/C . .

RKV Okay, I was going to say something but I though I would let you sweat a little.

S/C I appreciate that flight.

RKV . .

S/C Roger RKV

That was taped voice communication between spacecraft Gemini 7 and the Rose Knott tracking ship. The Rose Knott located off the east coast of South America. We are now 6 hours and 47 minutes into the mission of spacecraft Gemini 7. This is Gemini control.

END OF TAPE

This is Gemini Control at 7 hours and 4 minutes into the mission of spacecraft Gemini 7 which at the present time is passing over the Indian Ocean on it's fifth revolution around the earth. A few minutes ago as the spacecraft Gemini 7 was within remote voice range of the Mission Control Center in Houston through the Tananarive station, the spacecraft was updated for the D-4 and D-7 experiments. These are celestrial radiometry measurements. They measure the radiation intensity of both ground objects and celestrial bodies in space such as the moon and the stars. The sensing units that do these measurements are housed in the adapter section of the spacecraft and they are directed toward the object to be measured by orienting the spacecraft. And we will now play back that voice tape.

Cap Com — Gemini 7, Gemini 7, Houston Cap Com. I have your D-4, D-7 updates if you are ready to copy. Over.

S/C — . . . stand by . . Hello Houston, this is Gemini 7 . . for updates.

Cap Com — Okay, D-4, D-7 updates. The time 08 29 06, sequence number 111 mode 02. Time 09 10 20, sequence 411 mode 02. Time 10 44 10, sequence 411 mode 04. Recorder on for 30 seconds. Time 11 26 45, sequence 411, mode 02. That's it.

S/C — This is 7. Roger on the D-4 and D-7.

Cap Com — This is Houston, Roger.

S/C — Tananarive has . . .

Cap Com Roger, I would also like to know if you have made plans for your sleep periods.

S/C . . Gemini 7, roger, we are giving it consideration - we're getting ready.

Cap Com Roger. I have a map update when you are ready to copy.

S/C Gemini 7 ready to copy.

Cap Com Roger. Title is "Note time 05 41 24 remarks rev 4 115.0 east 13 hours 45 minutes 35 seconds . . . Ascension.

S/C We copy.

Cap Com Would you verify your cryo gage is switched off? Cryo switch off.

Roger.

Flight, you copied off?

Affirmative.

. . . Flight.

Roger, CSQ.

That was taped voice communications between the Coastal Sentry Tracking Ship and Spacecraft Gemini 7. This is Gemini Control 5 hours and 58 minutes into the flight of Gemini 7.

END OF TAPE

This is Gemini Control at 7 hours and 19 minutes - now 20 minutes into the mission, 7 hours and 20 minutes. Our spacecraft has just passed over Vietnam on it's fifth revolution around the earth. In our flight plan, according to our program, flight plan program, our pilot is in an eat period and our command pilot, Frank Borman, command pilot is in a sleep period and the last word we heard during voice communications with the spacecraft - they told us that they did intend to eat and to sleep so we assume that they must be following this flight plan. We have had no voice communication with the spacecraft for the past 30 minutes and we expect that we will not have voice communications for at least another 10 minutes. And at this time we are 7 hours and 21 minutes into the mission. All systems aboard the spacecraft are in a go condition and the crew is in excellent physical condition.

This is Gemini Control.

END OF TAPE

This is Gemini Control at 8 hours and 19 - now 20 minutes - 8 hours and 20 minutes into the mission of spacecraft Gemini 7 which at the present time is over the South Atlantic and coming up on the west coast of Africa. We have not had a voice communication with the spacecraft for quite some time now - almost an hour - except for a very brief conversation with pilot Jim Lovell over Hawaii and at that time the tracking station consisted of telling Jim Lovell to merely turn his C-band transmitter to the ON position. As the spacecraft passed over Hawaii according to the telemetry data that was received on the ground, neither command pilot Frank Borman nor pilot Jim Lovell appeared to be sleeping but both were quiet. We have a report from Cape Kennedy on the amount of damage sustained on pad 19 due to the launch of spacecraft Gemini 7. There was no structural damage. One servicing line to the spacecraft which passed cryogenic hydrogen to the spacecraft needed to be replaced and this is expected to be replaced and completed around noon tomorrow when the booster and the spacecraft are scheduled to be mated on the pad. There was a routine burnout of electrical cabling such as happens on every launch. There was no damage to the boom to the umbilical line and to those who are working on the pad, getting it repaired for the launch of Gemini 6, they say now that they feel that they are approximately 30 minutes ahead of their work schedule. So everything is proceeding well at the Cape and in our flight of Gemini 7, the crew is in excellent physical condition and all systems aboard this spacecraft are go.

Our Flight Director, Gene Kranz, about an hour ago instructed the Com stations, the ground tracking stations to keep voice communications with the spacecraft to an absolute minimum so that the pilots - command pilot and pilot can get some rest.

This is Gemini Control at 8 hours and 22 minutes into the flight of spacecraft Gemini 7.

END OF TAPE

This is Gemini Control at 9 hours and 3 minutes into the flight of spacecraft Gemini 7, which at the present time is passing over the Pacific Ocean on it's way toward the Hawaiian tracking station. This pass should bring it well within the range of that station. The spacecraft shortly, a few minutes ago, passed over the Coastal Sentry tracking ship located in the Pacific and at that time the crew was instructed to conduct a purge of the fuel cells. This is a routine purge that takes place every 6 hours when the spacecraft is powered up and approximately every 12 hours when it is powered down. The crew reported that the fuel cell light that has been on and had caused some concern in the early moments of the flight has gone out. It had turned out - it went out at 8 hours and 26 minutes of elapsed time and is still out at this time. And it should be out under normal operating conditions and we will play back for you now the taped voice communication between the spacecraft Gemini 7 and the Coastal Sentry tracking ship. Go.

CSQ Gemini 7, CSQ

S/C Go ahead, CSQ.

CSQ Okay, your next purge will be 13 hours 45 seconds. That's over the CSQ.

S/C 13 hours 45 seconds.

CSQ That's on 8 and at that time we will advise you . . . your new purge cycle.

S/C Roger. Be advised our fuel light has been out now about . . . that's 8 26.

CSQ Say again time.

S/C 8 26

CSQ 8 26, Roger. We confirm on the ground also, Flight.

Flight Roger, CSQ.

CSQ Everything looks real good on the schedule.

Flight Roger. Are you monitoring or observing his purge cycle there?

CSQ Affirmative.

Flight Okay.

CSQ Flight Charlie Dog 03 is now reading 37.4.

Flight Roger. Okay, you can do away with any further reporting in that ... check.

CSQ Roger, Flight, cycled through his quantity read switch, but it was too fast to get a reading.

CSQ Gemini 7, CSQ, we copy the end of the purge - looks real good here. We'll stand by.

S/C Seven, roger.

CSQ LOS on PCM.

Flight Roger, CSQ. Everything looked good during that purge.

CSQ Looked real good Flight.

That was the taped voice communication between spacecraft Gemini 7 and the Coastal Sentry tracking ship in the Pacific. This is Gemini Control.

END OF TAPE

This is Gemini Control at 9 hours and 20 minutes into the flight of spacecraft Gemini 7 which at the present time is passing over the Pacific ocean and has just gone out of voice range with the Hawaiian tracking station. As the spacecraft passed over Hawaii the ground station reported that neither flight crew member appeared to be sleeping. That is from the readout of the ground data. But both appeared to be quiet. We have a report from Cape Kennedy - we had a report - I think we passed that on some time ago on the damage sustained on pad 19 due to the launch of spacecraft Gemini 7 and I believe we did pass that on a short while ago but we will go over it now. First there was no structural damage to the pad. However, one servicing line to the spacecraft needed replacement and this will be done around noon tomorrow when the booster and the spacecraft are mated on the pad. There was a routine burnout of some electrical cabling but there was no damage to the boon or the umbilical line. And it appears to those people who are working on the pad repairing it, they say that they are approximately 30 minutes ahead of the schedule. Here in the Mission Control Center at Houston everything has settled down to what appears to be a routine flight. Our flight director, Eugene Krantz, discribes the mission thusfar as a beautiful flight. Everything going perfectly. Our flight surgeon, Dr. Fred Kelley says that from his data the crew is in excellent shape. And our reports from the ground tracking stations as the spacecraft passes over the readouts from the ground data look very good. And we did report, also, that the fuel cell light which had been on indicating a malfunction, but it was determined that the light was faulty and not the system. The fuel cell light has gone out. It went out at 8 hours and 26 minutes of flight.

And so at this time everything on the flight of spacecraft Gemini 7 is proceding normal and we look good. This is Gemini Control.

END OF TAPE

This is Gemini Control at 10 hours and 20 minutes into the flight of spacecraft Gemini 7 which at the present time is in its 7th revolution over the earth and is coming up - just passed over the Indian Ocean. Our last voice communication with spacecraft Gemini 7 was approximately 1 hour and a half ago. Our flight director, Eugene Kranz had ordered the ground stations to not have voice communications with the spacecraft so that the pilots could get some rest. However, at ground elapsed time of 9 hours and 45 minutes as the spacecraft passed over the Rose Knott tracking ship off the east coast of South America, that tracking station reported that both pilots appeared to be awake. There was no voice communication with the spacecraft and at that time our flight director, Eugene Kranz, talked to Charles Mathews, the Gemini program manager, who is at Cape Kennedy. And during part of that conversation, Kranz took the occasion to tell Charles Mathews that spacecraft Gemini 7 is a real good spacecraft. Here in mission control center the blue team of flight controllers are arriving to take over direction of the Gemini 7 flight. The shift changes in 10 minutes. Flight director, Eugene Kranz, who will be going off duty will attend a press briefing along with astronaut Gene Cernan, our spacecraft communicator, and John Aaron, our electrical and electronics controller. And visiting the control center here a few minutes ago was Dr. Robert Gilruth, director of the Manned Spacecraft Center, and James Alms, deputy associate administrator for the office of Manned Space Flight, Washington, D.C. They have been shuffling in and out of the Control Center all day and had returned to make a last late check on the procedures here. We have a report from Cape Kennedy that the

Titan 2 first stage booster for spacecraft Gemini 6 has been errected on pad 19 and the crew there is now approximately 1 and $\frac{1}{2}$ hours ahead of their schedule. This is Gemini Control at 10 hours and 22 minutes into the mission.

END OF TAPE

This is Gemini Control 11 hours and 50 minutes after lift-off. Gemini 7 spacecraft is now crossing the northern portion of the Indian Ocean. The next tracking station to acquire the spacecraft will be the Coastal Sentry tracking ship off the coast of Japan in approximately 13 minutes. Here in Mission Control the Blue Team of Flight Controllers is settling down for a long night. Fairly quiet activity in the mission. During the seventh revolution just completed, the Coastal Sentry reported that the spacecraft looked good on telemetry and the Aeromeds reported that both pilots were awake at that time. The present measurements or ephemeris of Gemini 7's orbit - is 119.8 by 173.9 nautical miles. That is perigee and apogee, respectively. Midnight visitors here in Mission Control during the shift change was space walker Ed White who was Gemini 4 pilot and also backup command pilot for this mission. And also, Mike Collins, backup pilot for Gemini 7. During the seventh revolution pass over Hawaii, they received an update for their on-board navigation chart. That is a point at which a certain or given orbit crosses the equator on an ascending node during the pass over the tracking ship Rose Knot, all systems were green as reported by the Rose Knot Cap Com. The crew, both of whom were awake, received flight plan updates, however, the command pilot had been scheduled to be asleep at that time. And there was also a telemetry dump of data from the spacecraft to the Rose Knot. At 11 hours and 52 minutes after lift-off, this is Gemini Control.

END OF TAPE

This is Gemini Control 12 hours 20 minutes after lift-off. Gemini 7 should now just be entering the acquisition area of the Canton Island voice remoting station. However, it is quite unlikely there will be any conversation during this pass for during the recent pass just a few moments ago over the Coastal Sentry tracking ship off Japan the crew made it quite plain that they want to sleep until 8:00 in the morning, Houston time. At that time they had both been taking cat naps. During the pass over the Coastal Sentry they received some planned landing area updates. Just routine updates of possible landing areas in case the occasion should arrise. This is Gemini Control at 12 hours and 20 minutes after lift-off

END OF TAPE.

This is Gemini Control 13 hours and 19 minutes after lift-off. Gemini 7 has now just entered the ninth revolution. It is now over the Red Sea. A short time ago, the spacecraft passed over the tracking ship Rose Knot. The spacecraft communicator out there, Bill Garvin, has commented that both the pilot and the command pilot appeared to be asleep. Blue Team Flight Director John Hodge told Garvin "don't bother them, let them sleep". Somebody has to be awake though for this next pass over the Coastal Sentry tracking ship off Japan because a purge of the fuel cell system is due during this pass. A telemetry tape dump was also accomplished during the pass over the tracking ship Rose Knot and spacecraft communicator Garvin said that everything looks good from where he was. This is Gemini Control.

END OF TAPE

This is Gemini Control 14 hours 20 minutes after lift-off. Gemini 7 spacecraft is now nearing the end of the 9th revolution in this 14 day mission. During the pass earlier in this revolution and over the tracking ship, Coastal Sentry the spacecraft communicator Charles Lewis, aboard that ship said that both of the crew were asleep. At acquisition however he did raise them on the radio to get them to accomplish a scheduled fuel cell purge. This purge has been completed. Flight director, John Hodge, told Lewis aboard the ship to advise the crew that radio silence would be maintained until 20 hours elapsed time. The next station to acquire the spacecraft will be the tracking ship Rose Knott off the east coast of South America in approximately 9 minutes. Meanwhile down at Kennedy Space Center pad 19 the erector was lowered at 2:38 central standard time in preparation for placing the second stage of the Gemini launch vehicle in the erector. That will be raised tomorrow morning. Or I should say this morning. We have a tape of the pass over the tracking ship Coastal Sentry which we will hear now.

CSQ CSQ flight

S/c All right CSQ go ahead.

CSQ Does it look as though everybody was sleeping when you came over the hill.

S/C Standby. CSQ we are purging . . .

CSQ Roger Gemini 7 CSQ. Your next purge will be at Carnarvon at approximately 20 hours. Approximately 20 hours.

S/C Approximately 20 hours.

S/C Next purge at 20 hours at Carnarvon.

CSQ Affirmative. Also we would like to have you bring your fuel cell O_2 tank pressure up to 400 psi on your gauge.

S/C Roger

CSQ That should be sufficient for the sleep period.

S/C Roger

CSQ Houston would like to know if you have placed your film pack in the plastic bags?

S/C Roger.

Houston Don't worry about the status report.

CSQ Say again flight.

S/C We have placed all but . . garbled - in the plastic bags.

CSQ I copy. Say again flight.

Houston I say don't bother them about the flight plan report. We can fix that up in the morning.

CSQ Roger, flight.

We are proned to believe they were asleep when we acquired.

Houston Okay. CSQ Houston Flight.

CSQ Go ahead

Houston You tell them that we are going to maintain radio silence now until 20 hours elapsed time.

CSQ Roger flight.

S/C CSQ Gemini 7. Purge complete.

CSQ Roger we copy your purge. Would you give us your quantity read switch in the ECS O_2 position. Until my mark.

S/C ECS O_2.

CSQ Okay would you go to fuel cell O_2 please?

S/C Fuel Cell O_2.

CSQ Roger, okay fuel cell H_2 please.

S/C There's my H_2.

CSQ We will try to maintain radio silence until about 20 hours elapsed time. We are through with your quantity read switch we got good readouts.

That was probably the last radio communication that we will have with the Gemini 7 spacecraft for about the next 6 hours. At 14 hours and 24 minutes after lift-off this is Gemini control.

End of tape

This is Gemini Control 15 hours 20 minutes after lift-off. Gemini 7 is now just east of the Philippián Islands nearing the end of the 10th revolution. Towards the beginning of this 10th revolution the spacecraft passed over the tracking ship Rose Knott, off the coast of South America and a comparison of times in the retrofire clocks on the ground and aboard the spacecraft showed that they are both in sync. This was done by radio command inasmuch as the two astronauts are asleep. Also the fuel cell oxygen cryogenic oxygen pressure is now standing at 450 pounds. The Rose Knott tracking ship was released for the night by the flight director, John Hodge, with a thank you to spacecraft communicator, Bill Garland. Just a few moments ago the spacecraft made the last pass of the night over the tracking ship Coastal Sentry. Spacecraft communicator Charles Lewis reported that all systems were go from the Coastal Sentry. The next station to acquire the spacecraft will be the Canary Islands station in approximately 56 minutes. At 15 hours and 21 minutes after lift-off this is Gemini Control.

End of tape

This is Gemini Control 16 hours and 20 minutes after lift-off. Gemini 7 spacecraft has just crossed the African Coast and is just south of the Canary Islands tracking station. Jim Fucci, the spacecraft communicator with the Canary Island station, reports that the crew is resting at the present time and that all systems are go on the ground. Radio silence is still being maintained at this time. This is Gemini Control at 16 hours 20 minutes after lift-off.

END OF TAPE

This is Gemini Control. Seventeen hours and 20 minutes after lift-off. Gemini 7 is presently over the south central Pacific and will be crossing the west coast of South America within a few minutes. The next station to acquire the spacecraft will be the Antigua station in the Eastern Test Range in approximately 23 minutes. About a half hour ago, Flight Director John Hodge, went around the horn as they say, and checked all the Flight Controller positions to see if they had any problems and none of the Flight Controllers reported any problems. The Red Team of Flight Controllers under Chris Kraft are beginning to come in to relieve the Blue Team. A late report from Kennedy Space Center, the spacecraft no. 6 is now at the Launch Complex 19. It arrived there at approximately 6:30 c.s.t. The second stage was erected at 5:00 a.m. c.s.t. and they are approximately 2 to 3 hours ahead of schedule. When Chris Kraft was told of these happenings, his comment was "that's what I like to hear." At 17 hours and 21 minutes after lift-off, this is Gemini Control.

END OF TAPE

Good morning, Gemini Control here on the 12th revolution, the first quarter of the 12th revolution, 18 hours 1 minute into the mission. An advising from the Cape that the spacecraft is being hoisted at this time, being hoisted to the top of pad 19, some 3 hours ahead of schedule. It looks like more than that, about 4-1/2 hours ahead of schedule, quoted last night. The spacecraft just passed the Canary Islands. Station radio silence was maintained; however, the surgeon at the Canaries and Dr. Berry here at the Control Center confirm that the crew did appear to be awake. They could tell this from the biomed readings here on the ground. However, radio silence was maintained. The flight plan calls for them to continue the sleep period until 4000 hours, but we would expect perhaps some conversation will occur over the Carnarvon station about 30 minutes from now. That acquisition is at 57 minutes after the hour. The Weather Bureau gives us the following advisory this morning - says the weather conditions are unseasonably good in the areas critical to the Gemini 7 space flight. Favorable weather is expected to continue through the next few days to the flight in most areas. In the mid-Pacific zone centered about 800 miles east northeast of Honolulu, broken cloudiness with scattered showers. Winds will be northerly, 15 to 20 knots, seas 5 to 8 feet. In the western Pacific, about 700 miles south by southeast of Tokyo, skies will be partly cloudy, winds northeast 15 knots and seas 5 feet. In the eastern Atlantic, centered about 500 miles north of the Cape Verdes Islands, partly cloudy skies with winds 15 knots, seas 4 feet. In the primary landing zone, the western Atlantic, about 500 miles east of Miami,

acceptable weather conditions will prevail with broken clouds and widely scattered showers, winds southeasterly by 15 knots, seas running 4 feet. Interesting meteorological features which will be overflown during the next 2 days include tropical cyclone Alice in the Indian Ocean south of the equator. This is Gemini Control Houston

END OF TAPE

Gemini Control here, 18 hours 49 minutes into the mission, and in the last 5 minutes we had a brief conversation between the crew and the Carnarvon Station. As we suspected, they were awake, Borman said they were having breakfast. It was suggested they might go on back to sleep - but they - Borman reported they both felt well enough, they felt rested, and they thought they'd stay up. Borman reported that the delta P light, a source of some concern the early part of the mission, had blinked back on at 17 hours 47 minutes elapsed time, which would be about 1 hour ago or 7:20 - 7:15 c.s.t. It had been out for a period of about 2 hours and he was reporting over Carnarvon that it had come back on. Borman also reported some slight drop in the hydrogen pressure. Fuel fell down to about 130. This will be brought up to 175 - 180 pounds. The other elements systems readings this morning go like this: the environmental control system oxygen remaining we show here on the ground 100 percent. This compared to a lift-off value of 107.2 percent. Fuel-cell oxygen remaining 97.9 percent in contrast to 101.1 percent, at launch. Fuel-cell hydrogen 100 percent compared with 106 percent at launch. And OAMS fuel - 73 percent. We have the taped conversation on the Carnarvon Pass and we'll play it for you now.

CARNARVON Gemini - Carnarvon

S/C Go ahead

CARNARVON Roger. We just said you can go back to sleep.

S/C Roger. We had a pretty good night's rest, now we're having a little breakfast.

CARNARVON Roger, understand
We show you go here on the ground and we'll be standing by.

S/C Okay. We'd like to hear someplace how much the spacecraft delta P lights are on .....

CARNARVON Roger.

Houston Tell him we don't think it's any problem at all.

CARNARVON We don't think it's any problem - on your delta P light at all. Did you copy?

S/C Roger. I realize there's no problem but what's causing it?

CARNARVON Well, ... we're still working on that one.

S/C Okay, thank you

CARNARVON LOS, Flight

Houston Rog.

END OF TAPE

Gemini Control here at 19 hours 20 minutes into the mission. About 4 minutes ago, the Antigua station acquired the spacecraft. It is a silent pass, and some 5 to 10 minutes from now at 55 minutes after the hour, the Canary Island station should acquire and hold the spacecraft for a 7 minute and 47 second pass which will also be silent. However, readings will be taken of the telemetry aboard from that C-band adapter - that C-band antenna in the adapter. All quiet and we expect to wake up the crew and start the normal daily routine at an elapsed time of 20 hours, some 40 minutes from now. This is Gemini Control Houston.

END OF TAPE

This is Houston. We just got a report from the Cape that spacecraft 6 and its launch vehicle were mechanically mated at 9:05 a.m. c.s.t. Earlier it had been reported that some more than 50 technicians were working in the white room area to accomplish this mate and it was reported to us at 9:05 a.m. our time. This is Gemini Control Houston.

END OF TAPE

Gemini Control Houston here, 20 hours 20 minutes into the flight on the 13th revolution. The flight director has just advised that the crew will be awakened during this next pass which will carry us across the southern extremity of our stateside tracking network, should be in conversation with them on the order of 5 to 6 minutes. The pass then will carry out across the Canaries and swing over the northern edge of the Kano acquisition area, and all in all should be a fairly talkative period. They will get a flight plan update. They will be advised that they are to carry out the D5 experiment, starting at approximately 21 hours elapsed time. This will be performed in the Canary-Kano area. They will also use their vision testing device in the same area, and their report on the crew status, how much food, water they have had, and how they feel. The D5, or star, tracking device is one by which they can find their position by taking sightings on some six known stars. The stars that are tracked to the horizon, the times are carefully recorded. Also, the intensity of the stars is measured by a photomultiplier device which can be attached to their helmets or held to their eye. This is Gemini Control Houston.

END OF TAPE

Gemini Control Houston here. Twenty hours 57 minutes into the flight and we've just been talking with the crew. Jim Lovell answered Elliott See's call this morning about 10 minutes ago and Jim is certainly sounding bright-eyed and bushy-tailed, at least he was from his opening comment which went like this - "good morning, it's about time you guys got to work down there." Then he made some reference to 2-weeks vacation with pay - it wasn't very clear whether he was referring to the ground or the crew. Then followed a most interesting discussion of the fuel cell, what we suspect are the leading contenders for this strange action of the light, which goes on and off and with no set pattern. Lovell also advised us of the water intake of the two men. He said as of this hour Frank Borman had drunk 61 ounces of water and he, Lovell, had consumed 52 ounces of water. We have the tape, of course during this pass we did perform successfully a fuel-cell purge of both hydrogen and oxygen. We have the tape of that conversation and we'll play it for you now.

HOUSTON Gemini 7, Gemini 7, Houston CAP COM. How do you read?

S/C This is 7 ..... Good morning, it's about time you'll got to work.

HOUSTON We were just thinking the same thing. We're ready to put you to work.

S/C Two-weeks vacation with pay.

HOUSTON Ok. Are you wide awake and ready to go?

S/C Righto. The pilot is now taking himself a temperature measurement from the Dr.

HOUSTON Roger. We'd like to give you'll now a source on the fuel-cell situation and we're also ready to take a fuel-cell purge from you.

S/C Roger, we're standing by listening.

HOUSTON Okay, why don't we go ahead and get the purge started?

S/C Roger, we'll purge now. Go on purge.

HOUSTON Roger.

Gemini 7, we don't see anything. Have you started the purge?

S/C Roger, we've started the purge.

HOUSTON Roger, we've got it now.

Frank, I'd like to suggest you get the update book out, we'll be giving you some updates as soon as possible here.

S/C It's already out.

HOUSTON Okay. Will I interrupt anything if I give you an update during the purge?

S/C Negative.

HOUSTON Okay. I have a mode update for you. Time 20 plus 38 plus 33. That's Rev 13, 114.7 West, 13 plus 26 plus 43 right ascension. Copy?

S/C Roger. Understand 13 plus 26 plus 43. Was that correct for the right ascension?

HOUSTON That is correct.

S/C Okay. Go ahead.

HOUSTON Flight plan update. We have a crew status report on the next pass that will be at 22 plus 17 plus 00.

S/C Okay.

HOUSTON Okay. And we'd like you to be prepared to give you as much - for you to give us as much data as you can on both of you since we're running a little behind, at that time.

S/C Roger

HOUSTON We have a radar transponder test at 22 plus 20 plus 00, Sequence 01. Remarks OFF at 22 plus 28 plus 00.

S/C Roger.

HOUSTON Have a D-4/D-7 at 22 plus 56 plus 00. Sequence 409 - and 40 correction - 409 and 410. Mode 02. Do you copy?

S/C Roger. Go ahead.

HOUSTON Got a crew status report at Carnarvon on the pilot at 23 plus 11 plus 00. We have exercise at 23 plus 21 plus 00. Do you copy okay?

S/C Loud and clear.

HOUSTON You can begin your eating preparation at 23 plus 31 plus 00. We'll have a fuel-cell purge at 23 plus 49 plus 00. A D-5 at 24 plus 15 plus 20. Sequence 01, Mode 01. You have S-8/D-13 25 plus 28 plus 52. Sequence 02. Pitch 30, down - yaw 13 degrees left. Closest approach 25 plus 29 plus 47. Do you copy?

S/C Do I understand you want us to purge again in 4 hours. Is that correct?

HOUSTON That's what we're planning at the present time, Gemini 7.

S/C Okay. Be all quiet?

HOUSTON I'll discuss the fuel cell with you here as soon as the purge is complete.

S/C Purge is complete, Elliott.

HOUSTON Okay. Here's a little run-down on what we think the situation is on that light. Can you give us a quantity read-out on the fuel-cell hydrogen and oxygen? Just give us the switch position for each one, we'll read them out here on the ground

S/C Roger. They're on fuel-cell oxygen now.

HOUSTON Roger. Okay. Give us the other one.

S/C Fuel-cell hydrogen.

HOUSTON Roger. Okay. A brief discussion here on fuel-cell light as we can see it, we think the most likely reason is an accumulation of tolerances of the delta P light transducer and the regulator cause a pressure difference between the water reference to the regulator and the delta P switch. In other words, just an accumulation of tolerances here which is giving us a light that is really not indicative of the true condition.

S/C Roger, thank you.

HOUSTON It's not much help I guess, but that's what we think is the most likely thing. A run-down on the other possibilities, the next most likely thing we think is a defective delta P switch. The third possibility is a water valve closed or some restriction in the water line, and that would pose a problem, but we feel that we can handle that even, even if it means shutting down that fuel cell, and we feel this will be indicated by a deterioration in the performance of that fuel cell over many hours. We'll be able to watch that build up, it won't pose any hazardous condition at all. And the last possibility is a regulator which is slightly out of tolerance. We think the latter two things here now are not very hot probability but they are possibilities. Do you have any other items or suggestions?

S/C Negative.

HOUSTON Okay. Do you have a water reading handy for us at this time Gemini 7?

S/C Stand by.

HOUSTON And do you have a propellant quantity read-out?

S/C This is 7. Propellant quantity is 68.

HOUSTON 68?

S/C Roger, 68 percent.

HOUSTON Roger.

Would you place your quantity read switch to the fuel-cell O_2 position again?

S/C Houston, CP drank 61 ounces of water.

HOUSTON 61 ounces for CP, Roger.

S/C Rog.

And P drank 52 - 52 ounces of water.

HOUSTON That's roger. 52 ounces for the pilot.

And what were the times of those final readings?

The time marked down, or the last water entries?

S/C Roger. CP was 18 plus 50.

HOUSTON Roger. 18 plus 50 and yours Jim?

S/C 18 plus 30 for mine.

HOUSTON 18 plus 30 - Roger.

S/C Ask Chris why do we have with the crew . .....(garbled)

HOUSTON Roger.

HOUSTON Next time over we'll get this crew status report from you and give you an update on the news.

END OF TAPE

This is Houston at 21 hours 9 minutes into the flight. We are on the 14th revolution. During a brief interchange at the Canary station just passed, the only new information gleaned was the fact that both pilots slept with their helmets on last night. There was additional peripheral discussions, but we have about a 50-second conversation I believe ready to play for you. The command carrier is still out. We can remote through the Kano station, although Elliot See advises he has nothing additional for the crew at this time. We expect no more conversation. Here's the tape of that brief Canary pass. We will play it now.

AFT Canary Cap Com, AFT

S/C Go ahead, AFT, Canary

Canary Okay, I guess you copied our pass, we updated the flight plan and got a fuel cell purge. Do you read so forth. We want you to get a tape dump this pass, also C-band track.

S/C Okay . Then the real-time TM will be on at acquisition.

Canary Is it still on?

S/C . . .

Canary Also the C-band

S/C Also the C-band is still on, okay.

Canary Space, AFT

S/C . . .

Canary Okay, we would like you to look at the quality of that C-band beacon. They reported a poor quality over the ETR this pass.

S/C Roger, will do.

Houston FLT Canary Cap Com, Houston Flight

Canary Go ahead, Flight

FLT You might ask them if they both have their helmets and gloves off.

Canary Okay

Cap Com AFD

S/C Go ahead, AFD

Canary AFD O K/our cap com didn't pass up two items on the flight plan, he was trying to save time and cut corners, and the two items are the 22, 35, 000, which is a PIF update at the Canaries, and 23 52 00, it is a go-no go for 31-1 at Texas, and you can pass those up.

Canary Okay.

Canary zero zero PLA update over Canaries, that is on the next pass over.

S/C Roger

Canary At 23 52 00, it is a go-no go for 31-1 over Texas.

S/C Roger, thank you

Canary Okay. What is the status of your helmet and gloves, are they on or off.

S/C garbled

Canary Okay

Hou FLT Would you give me a read back on what he said about the helmet and gloves status.

Canary Okay, at . . . helmet and gloves, both helmet and gloves were off in regards to 17-1. Jim Lovell says that he had his helmet and gloves off and Frank Borman was taking his helmet off . . .

Hou FLT . . . Ask them if they had their helmets on while sleeping.

Canary Roger.

Canary Cap Com, Canary

S/C Go ahead, Canary

Canary The guys have been asking who had his helmet on while he was sleeping.

S/C We both did.

Canary Okay, understand

Canary A report on the C-band track, at TCA we lost quality in the C-band

S/C Rog

Canary garbled

S/C Rog

Canary They are taped up

Houston FLT A change in the light when we purged over the Cape

Canary garbled

Houston FLT Information to the crew when we passed it up on the fuel cell

Canary Roger, we copied the whole thing.

Houston FLT Roger

Canary Tried to get this on a daylight cycle basis. So we find out if it comes on in the daytime and goes off in the daytime.

Houston FLT Yeah, it doesn't seem to be anything we can correlate this thing with. The water that they have drunk also indicates that the pressures we're seeing in the water tank would be about what you would expect so far anyway. So it looks like the thing is producing water, and it is being accepted in tank.

Canary Roger

END OF TAPE

Houston here - 21 hours 46 minutes into the mission. We have a conversation taped by the Carnarvon station which we'll play for you now.

CARNARVON I have TM solid.

CAP COM Roger, Carnarvon

CARNARVON Hello, Carnarvon CAP COM.

S/C Go ahead Carnarvon, Gemini 7.

CARNARVON Roger. Looks real good here on the ground. Latest tracking data shows that your orbit is 120.2 by 173.4.

S/C Thank you.

CARNARVON Roger. We have nothing else for you this pass, we'll be standing by.

S/C ... to Carnarvon. We do have this stuff here - just a minute ago. We've got something dragging from the rear end of the spacecraft. It plops in front of the window sometimes. It looks like some of the calking or cover that goes round the primacord where the adapter connects to the booster.

CARNARVON Uh, Roger, understand.

HOUSTON Flight, tell him that's what we guessed it probably was.

CARNARVON Jim, this is what flight guessed that it probably was that you had seen before.

S/C Roger.

CARNARVON Everything looks real good from here.

S/C Roger. Carnarvon?

CARNARVON Go ahead.

HOUSTON Roger. RF here on site reported that we had a sharp cut-off on TM signal strength and then it came back on again fairly fast. We're going to take a closer look at it. It almost looked like he switched something over in the spacecraft

or the transmitter dropped out momentarily.

HOUSTON FD Asked him if he made any switching in the TM?

CARNARVON Gemini 7, Carnarvon CAP COM.

S/C Go ahead Carnarvon, 7.

CARNARVON Roger. We noticed a little sharp decrease in TM signal strength here. Did you do any switching on telemetry?

S/C We're dumping here on it.

CARNARVON Roger. Understand.

S/C Is that better now? We just turned this dump switch off.

CARNARVON Yeah, it was just a momentary dropout, it wasn't very long.

S/C Rog.

CARNARVON ..... LOS everything is going LOS

HOUSTON Roger, Carnarvon.

END OF TAPE.

Houston here, 22 hours 14 minutes into the flight. The spacecraft shortly upcoming on a stateside pass which Texas will control primarily, as soon as we make acquisition through the Guaymas site. We will remote immediately through Texas.

During the course of the pass, we expect to get a major medical summary of the crew status of the flight. There will also be some flight plan updates that Elliot See will be passing on. Experiments through the next orbit call for such things as D4/D7 experiment in the next night-side roughly Tananarive, also some crew exercises along about Carnarvon. That would carry us through, I believe, the next revolution.

One of the interesting shift developments that has come about during this flight occurs in the Flight Dynamics area. They are in what we call the front trench of Control Center, where about four controllers work. They have decided to work 24-hour shifts straight through. They actually aren't on the floor for 24 straight hours. It amounts to about 16 to 17 hours, and while the spacecraft is off the range, that is, going over stations that cannot supply flight dynamics with the kind of data they normally need, the C-band data and the like, they do take time out and catch a nap here in our bunk room in the Control Center. They are scheduled for 24 hours of work and they are scheduled for 48 hours off for a team of three, and they will follow that alternation pattern throughout the flight. We should have contact momentarily, and we want to tune in and follow the progress of this pass as it develops. The Goddard Space Flight Center which handles the voice loops on our world range. The Texas station

has just been advised to go remote through Guaymas, and momentarily we should have a contact. We expect a fairly long pass on the order of 12 to 15 minutes. The orbit swings directly across the Gulf, just north of the tip of Yucatan peninsula. The spacecraft will be passing almost directly over Miami in a northeasterly direction, swinging up just south of Bermuda and make its turn and start south. There is Elliot See putting the first call through and here's the answer.

Cap Com I would like to advise you we would like to have the UHF 6 pass this time, is that okay with you?

S/C Roger, stand by.

Cap Com We are receiving your oral temperature, give us a blood pressure and stand by for the surgeon.

Surgeon Gemini 7, this is surgeon, your cuff is full scale.

S/C Roger

Houston here, that is Dr. Berry's voice you heard come on the line talking about the cuff. He's reading out the blood pressure data here on the ground. Let's go back and listen in. There will probably be some long pauses here during the blood pressure readings.

Dr. Berry Gemini 7, we have a good blood pressure, standing by for your exercise.

S/C . . . another blood pressure

Dr. Berry Roger

Dr. Berry Gemini 7, cuff's full scale.

Dr. Berry Gemini 7, we have a good blood pressure. Could we start with your sleep report, Frank?

S/C Roger, we - Jim and I slept . . . last night, I imagine we each got about 4 to 6 hours sleep last night.

Dr. Berry Okay, Frank. I would like to get some idea about the depth of that sleep. It appeared to us from the ground and all our records here that you were sorta in and out most all the time that was programed.

S/C Experiment. It was rather light sleep.

Dr. Berry Okay, could we get the food report?

S/C Roger. We have had two meals, . . . we are now preparing our third meal.

Dr. Berry Okay, you have had meal A and meal B, both of you and you are preparing the third meal. Were the bulk of meal A and B both eaten?

S/C I ate everything but some bites of beef sandwiches. Jim ate it all meal A and B. We both are saving our gingerbread for dessert at noon meal.

Dr. Berry Very good.

Dr. Berry Can you add anything to the water report yet, Frank, from the last time that we got the water?

S/C Say again, Houston, Gemini 7

Dr. Berry Gemini 7, this is Houston surgeon. We had 61 and 52 ounces reported for water, and have you added anything to that?

S/C I added 81 ounces for the pilot that is a total of 81 for the pilot and a total of 88 for me.

Dr. Berry 81 pilot, 88 command pilot?

Dr. Berry Gemini 7, this is Houston surgeon. Can you tell me about this exercise, Frank, have you been able to do it before each of the meals so far. Have we done it 10 minutes as programed?

S/C Negative. We are going to start with this meal.

Dr. Berry Start this meal. Okay.

S/C Roger

Dr. Berry Gemini 7, Frank, can you tell me about the suits? Are you fairly comfortable in the suits as they are presently configured?

S/C Yes, I think we are both fairly comfortable. It is a little warmer than we thought it would be based on Pete and Gordo's experience. We are running full cold and we are just comfortable.

Dr. Berry Full cold and just comfortable. Okay. How about the M-1 noise. Do we understand that you had the helmets on during sleep last night. Can you hear any noise from the M-1 and is it functioning all right at the present time?

S/C We had our helmets on but not our hoods, of course, and you can hear the M-1 and it makes noise when it is functioning.

Dr. Berry I read that you can hear the M-1 and it does make noise. Is that affirm?

S/C That is one of the reasons we were told to sleep as light as possible. We are getting used to it now, Chuck.

Dr. Berry Okay, we better check that again tonight,and we may want to turn that off then so we can be sure we get enough rest here tonight. Your rates and things here look very fine, Frank. You are both levelling out very well. There have not been any abnormalities that we have been able to see at all, and we have a report from both your families. They asked us to get the word to you that they are all okay. Sue is on her way back from the Cape and arrives here sometime about 2:30 this afternoon, and said to tell you that everybody is okay. Marilyn said the same, Jim.

S/C How did the oilers make out?

Dr. Berry They haven't yet, playing today.

S/C Let us know this afternoon how they make out

Dr. Berry Roger.

Dr. Berry Gemini 7, this is Houston surgeon. Do you read?

S/C Okay, Chuck

Dr. Berry Frank, you were going to try to do some estimates of voided volume. We will wait for that to a later time. Do you think this is helpful, are you going to be able to do that? If so, just say yes or no, and we can try to get it on a later pass.

S/C Negative. I don't think we will be able to give you an accurate volume.

Dr. Berry Okay, fine. We will dispense with it and not even try it then.

S/C Affirmative

S/C Chuck, for your information, this water unit is working very well and the (IV) unit is also functioning very well.

Dr. Berry Gemini 7, This is Houston surgeon. I read that the water gun was working very well. I didn't get the last unit that was functioning.

S/C garbled

Dr. Berry Roger

S/C Houston, this is Gemini 7, can you give us a time hack on elapsed time, please.

Cap Com Roger. I'll give you a hack at 22 26 45. Mark! 22 26 45.

S/C Roger. The elapsed timer is working perfectly, we haven't lost or gained a second on you.

Cap Com Roger.

Cap Com Got some news reports here, Frank, if it is a convenient time.

S/C Roger. Incidentally, Jim has turned on the radar transponder hope you are reading it.

Cap Com Roger.

Cap Com The first item is everyone on the Wasp is very happy about your launch. Their theme song is "I'll be home for Christmas"

Cap Com Next news item. We had two airliners had a collision up near New York yesterday. Fortunately, most of the people did survive. There were six lost, but 106 survived. One airplane landed with about a 30-foot section of wing off. The headlines in the Post today say GT-7 and spent rocket flight/play tag. They 've got very nice pictures of both Susan and Marilyn on the cover. Down at the Cape, things are going real good. Setting up Gemini 6, running about 4 hours ahead of schedule. Tennessee beat UCLA 37 to 34. The Buffaloes plays the Oilers here today and Minnesota is at Green Bay today. That is all we have right now.

S/C . . . . look down there.

Cap Com Roger.

Cap Com Incidentally, back to the strap hanging on the back of the spacecraft. We sorta surmised yesterday that the report that you gave on the skidding tne front end was caused - perhaps fell over in front of one of the aft thrusters during your perigee adjust maneuver, and that caused it to flop up in the front. You probably deduced the same thing by now.

S/C The strap came forward . . . .

Cap Com What we are saying is the reason it flopped up forward is probably drifted over in front of the thruster at the time you were firing and that threw it up there.

Cap Com Gemini 7, Houston. Have you turned the transponder off at this time?

S/C Roger. Transponder is off.

Cap Com Roger.

Cap Com Gemini 7, Houston, we are about to lose contact. We will get your flight plan report on the next pass.

S/C This is 7. Roger. . . .

Cap Com Roger

This is Houston here again, 22 hours 31 minutes into the flight. In the course of that 16-minute pass across the United States, we got the most complete medical update we have had so far during the mission. You heard Frank Borman say that both had slept last night on the order of 4 to 6 hours. Neither very soundly. Certainly, Frank says the sleep he had was not deep. So they are running a little bit light on sleep. They are eating what the flight plan calls for, and the water intake appears to be about right. They said they are a little bit warmer than expected, a little bit warmer than the Gemini 5 crew experienced, but fairly comfortable. The one reference to the Bill Huffstetler device which was repeated is a reference to a urine collection device in the spacecraft which apparently is working quite well. This is Gemini Control Houston.

END OF TAPE

This is Houston - 22 hours 47 minutes into the flight, and during the Canary Pass the crew received a number of planned updates for the next 4 revs. They were also queried as to whether they had gotten into the right-aft food box which concern here was to insure the ground here that they were eating the proper food in the proper sequence. The report came back that they were, in fact, in the right-aft food box and everything progresses very satisfactorily. Here's the tape from the Canary Pass.

CAP COM AFD Cap Com AFD

Canary Go ahead, AFD - Canary

FD Okay. You have your mission instructions, you have your PLA updates?

CANARY Roger.

FD Okay. And EECOM left the C-band and telemetry on for you.

CANARY All right, Flight and thank you.

FD Okay. Any questions?

CANARY No questions.

FD Okay. We're standing by for your pass.

CANARY Okay. You're in solid.

FD Roger, Canaries.

CANARY Gemini 7, Canary Cap Com, Com Tech .....

S/C You're coming in loud and clear.

CANARY Roger. We have you go on the ground, in good status.

S/C ..... loud and clear waiting for an update.

CANARY Okay. Ready to copy?

S/C All set.

CANARY 17-1, 25, 17, 08. 14 plus 20. 18-4, 28, 07, 21. 15 plus 15. 19-4, 2-, 42, 38. 14 plus 34. 20-3, 30, 57, 47. 17 plus 02. 21-3, 32, 34, 02. 15 plus 45. You look for a rolling reentry

and the weather in all areas is good.

S/C Gemini 7 roger and thank you for the transmission, just the right spacing.

CANARY Roger, you're welcome. We'll be standing by.

.... CAP COM HOUSTON FLIGHT.

CANARY Go ahead, Flight

HOUSTON Would you ask the crew if they saw any evidence of venting when they purged the fuel cells, in particular, the hydrogen?

CANARY Roger.

CANARY 7 - Canary

S/C This is 7 go ahead Canary.

CANARY Did you notice any venting while you were purging the fuel cells, especially in the hydrogen?

S/C We didn't notice any, and also we didn't notice any delta P light on the first section.

CANARY No delta P on the first section while purging and you didn't get any sort of venting at all?

S/C Not to our knowledge.

CANARY Okay. Copy.

HOUSTON We copied. We'd sort of like to know if they got the right-aft food box unstowed?

CANARY Go ahead, flight.

HOUSTON Again, we'd like to know if they got ---

CANARY CAP COM I can barely read you.

HOUSTON I said I'd like to know if they got the right aft-food box unstowed?

CANARY I cannot read you flight. Say again.

HOUSTON Was that their voice control?

CANARY Flight, Canary, I cannot read you.

HOUSTON Can you read me now?

CANARY Very, very weak. Go ahead, say again.

HOUSTON We would like to know if the crew has gotten the right aft-food box unstowed?

CANARY I can't read you Flight - cannot read you.

Hello, this Canary. Can you give us a conference on 2 as well as 1 this time, we're fading bad on 1.

HOUSTON Roger, Roger.

CANARY Canary voice check.

HOUSTON I read you loud and clear, how me?

CANARY Very, very weak. You might say again. I might catch it.

HOUSTON Okay. We want to know if the crew got the right aft-food box unstowed?

S/C I copy Flight, Gemini copy.

HOUSTON Can you copy?

CANARY Say again, Flight, I read you better.

.... if copies, we'll get it.

HOUSTON We want to know if the crew got the right aft-food box unstowed?? Do you copy that?

CANARY .....

S/C Our right aft-food box unstowed?

HOUSTON That's affirmative.

S/C Okay.

CANARY We'd like to know if you got the right aft-food box unstowed?

S/C Roger. Since purge we're in mission configuration everything's in good shape.

CANARY Roger. Understand.

S/C The only hitch in our stowage plan was caused by our putting those magazines in our plastic containers.

CANARY Roger. Copy.

HOUSTON We copied that.

CANARY We have TM LOS.

HOUSTON Roger.

CANARY You copy me, Flight?

HOUSTON Affirmative.

CANARY Okay. I had to cut you off there while I talked because there was so much noise on the line, but they did say that they did unstow the right aft-food box and they are right now in mission configuration, and the only thing that happened to them in any way was getting those magazines in those plastic containers. Do you copy?

HOUSTON Affirmative. We copy.

CANARY Ok.

END OF TAPE

This is Houston, 23 hours, 23 minutes into the flight. We're on the fifteenth revolution. We've just completed a medical data pass on Jim Lovell by the Carnarvon station. Not too much of a talk interchange there. Of more significance upcoming during the next pass across the United States, the Gemini 7 crew will be given a go for a 31 revolution flight. That is they will be given go ahead for a 31-1 flight. We have the Carnarvon tape and will play it for you now.

CRO	Gemini 7, Carnarvon.
Spacecraft	Go ahead Carnarvon
CRO	Roger. We have you go on the ground, we also are receiving a valid temperature from the pilot. Stand by and I'll hand you over to the surgeon.
CNV Surgeon	Hello, Carnarvon, surgeon standing by for your blood pressure.
Spacecraft	Rog. Pressure is full scale.
CRO	Carnarvon
FD	Carnarvon, FD, go ahead.
CRO	Roger, we show everything go on the ground.
FD	Roger, we copy.
CRO	Rog. Negative..... at this time.
CRO Surgeon	Gemini 7 Carnarvon Surgeon, we have a valid blood pressure, standing by for mark when you start your exercise.
Spacecraft	Begin exercise now.
CNV	Call it sea land track at Carnarvon.

CRO Surgeon — Copy valid .....

Spacecraft — .....completed .....blood pressures.

CRO — Your cuff is full scale. You still have a valid blood pressure. Do you have any change in your food or water intake to report?

Spacecraft — This is 7, negative. We're going to start our exercise program about this time.

CRO — Gemini 7, this is Carnarvon, check.

Spacecraft — No changes in food or water to report at this time but we'll be starting our exercise program.

CRO Surgeon — Understand, no change. Carnarvon Surgeon out.

CRO — Seven, you don't have to acknowledge this, we still have you go on the ground, we'll be standing by. Carnarvon

FD — Go ahead Carnarvon

CRO — Fuel cell 02 BA02 reads 413 psi.

CNV FD — 413?

CRO — 413. O H2VA 04 reads 193, ECS 02 CA 02 reads 608. That's getting down pretty low. Close to the limits but....

FD — All Right

CRO — Roger, we're still go here on the ground. Everyhting looks good.

Houston — That's all those limits so let's let him worry about it.

CRO — Rog, flight.

CRO — Carnarvon.

Houston — Go ahead

CRO I don't think I got the real time PM off but

I did get.....for LOS.

Houston Rog

CRO I got a reject on my real time PM off.

Houston Rog

END OF TAPE

This is Houston, 23 hours 43 minutes into the flight on the 15th rev. Momentarily the Guaymas station should acquire in what will probably amount to a 16 to 18 minute pass across the United States. In the course of this pass the Flight Plan calls for the crew to perform another fuel cell purge. This will be done over the Texas station. They are also to advise us on their quantity readings - on their breathing oxygen, on their fuel cell oxygen, fuel cell hydrogen quantities. This is all the Flight Plan shows for during the pass. Guaymas has just advised they have acquisition aid contact, the first beacon, which does acquire, and we are standing by for the first voice interchange. Still no talk from Guaymas. They would acquire at 18 minutes and 37 seconds, that would have been nearly a minute ago. Beyond the stateside pass occur for them another D-5 Experiment, the Star Occultation Experiment wherein they take sightings of at least 6 stars. This is a new experiment to Gemini and it is aimed toward perfecting simple onboard navigation system to back up the rather elaborate electronic navigation systems which are available to them in the spacecraft as well as on the ground. A little later over Carnarvon they are to start their exercise program. This is in addition to the normal bungee cord exercises which precede each blood pressure measurement. We're standing by for Guaymas contact. They may be having a little bit of difficulty down there with their transmitter. Now Guaymas advises they do have telemetry contact. Guaymas says that all systems look good on the ground. Now the Texas station is remoting and let's follow that discussion.

HOUSTON Gemini 7, Gemini 7, Houston CAP COM. How do you read?

HOUSTON Gemini 7 Houston. How do you read?

S/C Houston - 7 - read you loud and clear.

HOUSTON Roger. You have a go for 31-1. Stand by to receive a TR update.

S/C Roger. Have a go for 31-1.

HOUSTON Gemini 7 did you get an update indication?

S/C This is 7 roger. Dp's line up and up.

HOUSTON Roger. Checks out good here too.

Standing by for a fuel-cell purge.

S/C Roger.

HOUSTON Is Frank available to talk to while you're doing that Jim?

S/C If that'll ease you. Go ahead.

HOUSTON Frank, we have an opportunity to take a picture of the Houston area on this pass, it's not real close, but if you're able to you might take one. And on the next pass we have an S-8/D-13. Laredo, the weather is very good and very clear, we have smoke-pots set up along the north edge of the pattern, the wind is from the south, and you should have a real good opportunity there, and there will be an even better opportunity to take a picture of Houston on that pass if you can manage to do it after the Laredo pass. Of course the S-8/D-13 has top priority.

S/C Roger. When did they move that to Laredo? I thought that was in California?

HOUSTON You mean Yuma. Maybe it's still in Yuma.

S/C Gemini is purging now.

HOUSTON Roger, observing the purge.

You have a TX on the way, Gemini 7.

S/C Thank you.

Are you observing the purge?

HOUSTON Roger. We're observing the purge.

S/C Okay.

HOUSTON The reason we're asking for this picture of Houston is we have unusually clear weather here at the present time we thought it would be a good opportunity to take a picture.

S/C We will try.

HOUSTON Roger.

S/C Elliott, this is Gemini 7, we missed you.

HOUSTON Okay. Well, you were about 120 miles away on this pass so I'm not too surprised. But the next pass should be real good.

S/C Roger. Jim took a picture of Mobile, he recognized Cookie, you know he always stops there for gas.

HOUSTON Roger.

Even Jim couldn't make it without stopping in Berkley today.

S/C .....

HOUSTON Observed you've completed your fuel-cell purge. We would like fuel-cell quantity cryo readouts for approximately 20 to 30 seconds on each position.

S/C Roger. Going to oxygen.

HOUSTON Roger.

And Gemini 7 could you give us what you have in the way of a flight plan report at this time?

S/C Roger. We have completed everything on the flight plan detailed in general up to this point plus one humidity sensor reading.

HOU Roger.

Gemini 7 would you also give us a readout on ECS O_2 quantity?

S/C Roger. I am now going to CO_2.

HOU Roger.

We're asking for an ECS O_2.

S/C Roger. I'll get you both.

ECS O_2.

HOU Roger.

AOS 91

HOU Gemini 7. Do you have any S-8/D-13 vision tests or scores that you could give us?

S/C Not right now, Elliott. We didn't understand that would be on real time and we have 'em on cards and they're put away. Check with one of the other sights.

HOU Okay. We did want those out real-time and that will be good on a future site. We hope you'll have good luck on S-8/D-13 on that next pass. It's very clear weather and as I said, the smoke-pots are all set up along the north edge. They're trying to get a smoke generator set up on the northwest corner, they're not sure they'll have that. But there are a lot of smoke-pots along the north edge there so it should be well marked.

S/C Roger. We'll be looking. ..... here we have our GO--NO-GO quantities on the fuel-cell for you.

HOU Go ahead.

S/C 1-A reads 3.5. 1-B 4.0. 1-C 4.0. 2-A 3.5. 2-B 3.5. 2-C 4.5.

HOU Roger.

S/C RCS A - 3000, temperature 75. B - 3000, temperature 75. Ieft-hand secondary O_2 - 5400. Right-hand secondary O_2 - 5200. All main batteries are 22 volts or above.

HOU Roger.

S/C Voltage in the main bus is 27.3.

HOU 27.3 main bus voltage roger. Gemini 7, have you noted any improvement in the fuel-cell performance following the purges?

S/C We have noticed no change.

HOU Roger.

This is Gemini Control again. Apparently we are out of range from the Bermuda Station so we will conclude this pass at 24 hours 5 minutes into the mission.

END OF TAPE

This is Houston, 24 hours, 20 minutes into the flight. We are on the 16th revolution. The spacecraft just south of the Kano station. Gemini 7 was just advised that we on the ground were standing by if they had anything that they could advise us and they said they were performing the B5 star measurement experiment. They had nothing new. This is Gemini Control.

END OF TAPE

This is Houston, 24 hours, 36 minutes into the flight. We're on the 16th rev. In the last few minutes, we've had a conversation between Elliot See and Frank Borman remoting through the Tanarieve Station. Borman reported that he was having some difficulty with his D-5 experiment equipment. He said the filter through which the stars are sighted, in the eye piece, the reticle, is remaining green all the time when it should be switching to a secondary color, red. Elliot See advised that we do not know exactly what's wrong with the equipment, immediately. We're working on it. And will come back to him later. Earlier there was reference to some film, a picture of Houston was asked because it is a clear sunny day here. It was suggested to catch one on the next pass. The Gemini 7 crew is carrying the film packs giving the capability of taking more than 500 still pictures. They also have some 16mm motion picture film, something over 700 feet available of that. The general plan was to reserve much of the motion film for the rendezvous exercise with the Gemini 6 spacecraft. We have the tape of the Tanarieve pass, we'll play it for you now.

TAN	Tanarieve has acquisition.
SPACECRAFT	This is Gemini 7
HOUSTON	This is Houston, go ahead Gemini 7.
SPACECRAFT	(garbled).....
HOUSTON	This is Houston, Gemini 7. We're not reading you very clearly, will you say again slowly?
SPACECRAFT	Roger. The spectometer will not change from red to green. The verticle is green all the time. Is there any position you want us to use.....

HOUSTON Roger, stand by. Gemini 7, Houston. We are working on it. We'll probably not have an answer very quickly. Gemini 7, do you read? Gemini 7, Houston, do you read? Gemini 7, Houston, do you read?

SPACECRAFT Fine, Houston, Gemini 7.

HOUSTON Rog. We understand your D-5 reticle is green all the time. We are working on the problem. We do not expect to have an answer quickly. Do you copy, 7?

Gemini 7, Gemini 7, do you read Houston?

SPACECRAFT Rog, read you loud and clear go on.

HOUSTON Did you copy my transmission?

SPACECRAFT Roger, say again, please.

HOUSTON We understand your D-5 reticle is green all the time. We are working on the problem. We do not have an answer.

SPACECRAFT Thank you.

HOUSTON Roger

END OF TAPE

This is Houston, 24 hours 54 minutes into the flight, spacecraft over the heart of Australia. In the Carnarvon discussion just ended, we had a little better explanation of the problem with the photometer. Carnarvon also reported they had an excellent visual sighting of the spacecraft. This is the second or third perhaps we have had today around the world. It is just breaking dawn in Australia, so they would have had an excellent sighting opportunity. We have the Carnarvon tape and will play it for you now.

Carnarvon Cap Com Carnarvon

S/C Flight, Carnarvon, Gemini 7

Carnarvon We have your TM solenoid ground, you look good. We would like to get more information on your T-5 reticle as you can give it to us, a detailed description.

S/C Roger. The reticle, when you push the calibrate button, it should turn red and then as you advance the gate wheel it turns from red to green. This one stays green at all times so we are running the experiment with the gate wheel pulled down.

Carnarvon Roger, copy.

. . . . . Flight

FLT Affirmative

Carnarvon I have a flight plan update for you, if you are ready to copy, if not, we can give it to you over Hawaii.

S/C Roger, I would like to hold off on that, we don't have any lights on, we're trying to stay dark adapted for the stars. Then I want to get set up for SAD-13 over Texas.

Carnarvon Roger. We will hold off til then over Hawaii

S/C Thank you.

Carnarvon Goddard C-band track flight

Flight Rog. Would you give us another main, your first was garbled.

Carnarvon Roger, coming your way. Can I give you our A-Summary, flight?

Flight Affirmative.

Carnarvon Rog. Carnarvon, we're showing him in pulse mode with a little thruster activity.

Flight Rog

Carnarvon Carnarvon, We've got a visual on the spacecraft.

Flight A visual on the spacecraft. Rog. What time of day is it there?

Carnarvon Just before daylight.

END OF TAPE

This is Mission Control. Twenty five hours 19 minutes into the flight. The Hawaii Capsule Communicator, Ed Bendel, has just run through a major flight plan update with the crew carrying them through the next 7 to 8 hours. On this next upcoming pass across the States they will, for the first time, try the S-8/D-13 Experiment. This involves the large 2000-ft squares near Laredo, Texas laid out in such a way with the slants bearing directions in the squares and the pilots are to spot them and call out the - what they see - the direction of the slants. The site down there at Laredo, some 40 miles north of Laredo, is well-marked we're told with smoke-pots, there is additional smoke west of Laredo to aid them. The weather is clear and we're hopeful they will acquire today. The Gemini 5 crew had some trouble spotting it largely due to clouds and also they had a fuel problem later in their flight. During the Laredo pass the crew will pitch the spacecraft down 50 degrees and they will yaw left 15 degrees. Meanwhile we've got the Hawaii tape, we'll play it for you now.

HAW Gemini 7 Hawaii CAP COM

S/C This is 7 - go ahead

HAW How're you doing up there this morning?

S/C Looking great, looking great.

HAW Okay. We're showing you go here on the ground. Do you want to copy this flight plan update at this time?

S/C This is Gemini 7. We're ready to copy and also we should confirm the yaw instructions for the S-8/D-13 Experiment.

HAW Okay. The yaw instructions for S-8/D-13. Yaw - 13 left.

S/C Roger. Understand 13 - 13 degrees left. Thank you.

HAW Okay. Here we go.

... That's 13.

HAW MSC 12: Time 27 00 3 minus. Sequence 01. Pitch 30 degrees, down. Yaw - 0 degrees. D-4/D-7: 27 00 3 minus. Sequence 41 minus, Mode - 02. Concurrent with MSC-12: Mode - correction - Sequence 421. Mode 02. Same remarks. Sequence 422, mode 02, same remarks. D-4/D-7: 27 14 00. Equipment - OFF. MSC-2 and 3: 27 15 00. Sequence 02. OFF at 42 00 00. D-5: 27 15 00. Sequence 01. At 28 37 00 - Crew Status Report - Command Pilot. 28 44 00 - Purge fuel-cells over Canaveral. MSC-2 and 3: 2 minus 00 00. Sequence 03. Stop at 29 20 00. The rest of these are S-8 - correction the next one is S-8/D-13: 29 42 00. Sequence 04. 29 57 00 - Crew Status Report from the Pilot at Hawaii. At 31 33 00. You have a planned landing area update. At 31 55 00 - Radar Transponder ON. At 32 05 00 Purge fuel-cells at the RKV. At 32 05 00 - Radar transponder OFF - it'll be end of test and I have a correction when you're ready.

HOU That transponder off is - -

S/C This is Gemini 7. I have copied. Say again.

HAW Okay. The Crew Status Report on the Command Pilot at that time will be over Texas.

HOU And the transponder should be off at 3212.

S/C Roger, Hawaii, I have it all written down and the Crew Status officially is (interrupted by

HOUSTON ..... Flight

HAW Okay. They want to change that transponder OFF to 32 12 00.

S/C Roger. Changing the last transponder OFF to 32 12 00.

HAW Affirmative.

Anything else, Flight?

HOU Negative. Well done.

HAW Okay. We'll be standing by here if you need anything else.

Do not acknowledge.

That was taped voice communication between spacecraft Gemini 7 and the Hawaii Tracking Station. At this time, we are - the spacecraft is passing over the United States and will shortly be coming up on the Texas Tracking Station and at this time we are 25 hours 26 minutes into the flight. This is Gemini Control.

END OF TAPE

This is Gemini Control at 25 hours 30 minutes into the flight. Our spacecraft, at this time, is over the Texas tracking station, and we will now give you live voice communication between the spacecraft and that tracking station.

S/C Roger. I couldn't read the . . .

CAP COM Roger. I understand you read a 3 and a 4. Do you know what squares those were on?

S/C They are on the biggest one 3 2 and 4, that 's all I could read.

CAP COM A 3, a 2, a 4 on the first three squares, is that correct?

S/C . . . helped a lot because I was on my way past the data at the time.

CAP COM Okay, dead eye.

CAP COM How about the picture of Houston. Were you able to do anything with that?

S/C We missed that the last time. By the time we got to Houston, we were . . .

CAP COM How about this pass?

S/C We're just about pointing straight up now, Elliot, we would have to use . . . scans to get back.

CAP COM Roger, we will give it another try tomorrow then if we get a chance.

S/C Righto

CAP COM I sent modifications in the flight plan update, when you are ready to copy.

S/C Stand by a second. Ready to copy.

CAP COM Roger. We are deleting several items on that flight plan we just gave you, and we are adding a new item. Okay, the ones we are deleting are MSC-12 and 27 00 39; B47 at 27 00 39 all three sequences on that; the D-4, D7 at 27 plus 14 plus 00, and the D5 at 27 plus 15 00. Did you copy all the 01 sequence on that? Did you copy all of that?

S/C Roger. I have all of the ones you have deleted.

CAP COM Roger, and the reason for deletion is the instrument malfunction which you reported. The thing we are adding is SAD-13 and 27 03 54, sequence 02, pitch 30 down, yaw 18 left, closest approach 27 04 49. Did you copy?

S/C. This is Gemini 7. You were cut out for part of the transmission. Say again the time and the pitch angle.

CAP COM Roger. The time was 27 03 54. The pitch was 30 down, 3 zero down. Do you copy?

S/C Roger. Adding SAD 13 and deleting D4/D7 and MSC-12.

CAP COM Roger. Deleting D5

S/C Rog.

CAP COM Gemini 7, we have a question on the status of cabin lights at the time you were doing the D5 experiment.

S/C The cabin lights were out except for the fuel cell delta P light which was loud and clear.

CAP COM Roger

That was live voice conversation between Spacecraft Gemini 7 and the Mission Control Center remoting the voice through the Texas tracking station at Corpus Christi. We did miss the early part of that conversation. We have a tape on that, and we would like to play that tape back for you. In the meantime, the spacecraft is on its 16th revolution, just started its 17th revolution over the earth at 25 hours and 36 minutes into the flight. Our medical officer tells us that the spacecraft crew is in excellent condition, and all the ground data that we have show that the spacecraft systems are in good condition. Here in the Mission Control Center, the red team of flight controllers headed by Christopher Kraft, our flight director, of the red team is preparing to move out, and their places are taken now by the blue team of flight controllers headed by flight director, Gene Kranz. Now, at this time, we will play back that voice conversation between the spacecraft and the Corpus Christi tracking station to pick up the part that we missed. We will play it back in its entirety. This is Gemini Control at 25 hours 37 minutes into the flight.

FLIGHT Houston Flight

TEXAS Go ahead

FLIGHT You might tell them that there is some heavy smoke west of Laredo.

TEXAS Say again

FLIGHT There is some heavy smoke west of Laredo.

TEXAS Roger.

TEXAS There is heavy smoke west of Laredo, Gemini 7. . . . LOS at that time, I don't know whether he heard me or not.

S/C Say again

TEXAS Just when I was saying that I had LOS, I don't know whether he got it or not.

S/C Rog. Heavy smoke.

FLIGHT Houston Flight

Guaymas Flight, Guaymas

FLIGHT You might tell him the following, I'm not sure he got that message from Hawaii. Extremely heavy smoke 100 miles due west of Laredo site, 30 miles or more flue of very dense smoke.

Guaymas Do you understand 100 miles west of Laredo, 30 mile -

S/C Rog.

Guaymas Guaymas AFT

S/C AFT Guaymas

Guaymas Okay, the telemetry will be on at your acquisition. Hawaii turned it on and left it on for you.

S/C Roger, understand.

Guaymas Gemini 7, you are go on the ground.

S/C Rog.

Guaymas Guaymas Cap Com

S/C Gemini 7, go ahead

Guaymas Roger. All systems look good here on the ground.

S/C Thank you, Guaymas.

Guaymas We would like to tell you that there is some very dense smoke about 100 miles due west of Laredo with about a 30-mile flue.

S/C Roger, I understand dense smoke 100 miles west of Laredo and 30 mile . . .

Guaymas Roger, we have nothing else for you, we will be standing by.

. . . garbled

CAP COM Texas go remote

TEXAS Texas remote

CAP COM This is Houston,go ahead Gemini 7.

S/C Roger, Got a sight reading - a 3, a 4, and now it is going away, Elliot, I picked up a - garbled

We are going over the Gulf now.

CAP COM Roger

S/C garbled.

CAP COM Roger

S/C I couldn't find the smoke.

CAP COM I beg your pardon. Say again.

S/C Roger. I couldn't see the smoke at first.

CAP COM Roger. Understand you read a 3 and a 4. Do you know what squares those were on?

S/C Yeah, I think it was 3, 2, and 4, that is the only ones I could read.

CAP COM A 3, 2, and a 4 on the first three squares. Is that correct?

S/C . . . helped a lot because I was on my way past the data at the time.

CAP COM Okay, dead eye.

CAP COM You got the picture of Houston, were you able to do anything with that?

S/C We missed that the last time. By the time we got to Houston, we were on . . . fuel.

CAP COM How about this pass?

S/C We are just about pointing straight up now, Elliot, we would have to use too much gas to get back.

CAP COM All right, we will give it another try tomorrow, if we get a chance.

S/C Righto

CAP COM I sent modifications in flight plan update, when you are ready to copy.

S/C Stand by a second. We copy.

CAP COM Roger. We are deleting several items on the flight plan we just gave you, and we are adding a new item. The ones we are deleting are MSC-12 at 27 00 39; D47 at 27 00 39, all three sequences on that; the D4/D7 at 27 plus 14 plus 00; and the D5 at 27 plus 15 00. Did you copy all that - the 01 sequence on that. Did you copy all this?

S/C Roger, I have all the ones you have deleted.

CAP COM Roger, and the reason for deletion is the instrument malfunction which you reported. The thing we are adding is SAD-13 at 27 03 54 sequence 02, pitch 30 down yaw 18 left. Closest approach 27 04 49. Did you copy?

S/C This is Gemini 7, you were cut out for part of the transmission. Clearing through the time and the pitch angle, please.

CAP COM Roger. The time was 27 03 54. The pitch was 30 down, 3 zero down. Do you copy?

S/C Roger. Adding SAD 13 and deleting D47 and MSC-12.

CAP COM Roger, and the D5, deleting D5.

S/C Rog.

CAP COM Gemini 7. On the question of the status of cabin lights at the time you were doing the D5 experiment.

S/C The cabin lights were on except for the fuel cell delta P light which was loud and clear.

CAP COM Roger

END OF TAPE

This is Gemini Control. We are now 26 hours and 50 minutes into the flight. Spacecraft Gemini 7, which at the present time is passing over the Hawaiian Tracking Station. We had a schedule - tentative schedule MSC-4 Experiment over Hawaii. This is a Laser Communications Test. The test was scrubbed because the station could not get ready for the test in time. We have scheduled an S-8/D-13 Experiment, which is coming up, this is the astronaut visibility experiment using the ground patterns near Laredo, Texas. And this will take place as the spacecraft passes over the States on this revolution. And the time estimated will be in approximately 12 minutes. Our Flight Director, Gene Kranz, says - tells us that the spacecraft is in excellent condition and our Flight Surgeon tells us the crew is in good condition. A few minutes ago as the spacecraft passed over Tananarive and Carnarvon we had some voice communication between those ground stations and the spacecraft and we will play the taped conversation now.

CRO Carnarvon Cap Com, AFD

HOU Good morning from the White Team.

S/C Ah Roger. Good morning, Gene.

HOU This is Manfried. Not Gene.

S/C All right, Dutch. Hey, be advised that the sun is going to come over Houston tomorrow because it has arisen over Carnarvon.

HOU Ah, Roger, since you acquired first, all we have for you is a nice passive pass with a little old adapter C-band track.

S/C All righty. We'll try to do all those things.

..... Ok mighty fine.

HOU This Cap Com Houston Flight. Give me a spacecraft g.e.t. time sync, please.

S/C Okay. I'm sitting at 26 hours 11 minutes 49, 50, 51, 52, 53

HOU Okay. You're in good shape.

S/C Roger.

HOU What TR time you got set in your clock out there?

S/C I got 31-1. It was right on during the last pass.

HOU Okay, give me a time hack.

S/C All righty. We're sitting at 21 hours 27 minutes, 3, 2, 1, 0.

HOU Okay, you got it.

S/C Roger.

CRO Carnarvon, Cap Com.

HOU Go Carnarvon.

CRO We got valid skin-track on the booster.

HOU Roger.

CRO We have pilot TM and it looks good here on the ground.

HOU Roger, Carnarvon.

CRO Gemini 7 Carnarvon Cap Com. We have nothing for you this pass, we are standing by. You look good on the ground.

S/C This 7 roger on standby. We have a question for you.

CRO Roger.

S/C Carnarvon - 7.

CRO Roger 7.

S/C We have an MSC-2 and 3 update and when we copied it down it was - time was 29 plus 00 plus 00. Sequence number 03. And remarks were stop at 29 plus 00 plus 00. We feel like one of the times are wrong. Could you check that out for us?

HOU The stop time Carnarvon was - - -

CRO The stop time was at 29er 20.

S/C Uh, Roger. 29er 20 plus 00 and stand by now for the S-8/D-13 daily report.

CRO Roger, we're standing by.

S/C We're level at 06 plus 53 with minus 4, nominal minus 10 and a level at 19 plus 10 and minus 7 and nominal minus 10.

CRO Okay Gemini 7. Carnarvon. I caught the level at 06 plus 53 with a minus 4. One at a minus 10 plus a low at 19 plus 10 with a minus 7. Normal with a minus 10.

S/C That's roger.

CRO Flight.

....

CRO Flight. We have no indication of a multiplexer problem here. Everything is setting in real-time.

HOU Roger.

CRO The astronauts turned the quantity read switch to the fuel-cell O_2 position and we're reading that 95.2 percent on the ground.

HOU Send us a summary.

CRO It's already off the flight wheel. I'll play the tape back and give it to you.

HOU Okay.

CRO Gemini 7 Carnarvon. We copied a fuel-cell O_2 quantity read. We're reading at 95.2 percent here on the ground.

S/C ..... Roger.

CRO 15 seconds to LOS.

HOU Roger, Carnarvon.

HOU He's got 46 per our acquisition chart, Sir. 34 right now.

HOU Okay.

HOU Give me a hack when you get LOS and we'll check it out.

HOU Rog, we had LOS.

Stand by 1

.....

HOU We got about 10 more seconds to go. We have LOS.

END OF TAPE

This is Gemini Control at 27 hours and 2 minutes into the flight of spacecraft Gemini 5 - Gemini 7, which at the present time is coming up over the States and is within voice range of the Texas Tracking Station at Corpus Christi. We will remote through Mission Control - our mission control voice through Corpus Christi and we will give you the live conversation that takes place now.

S/C This is 7. We have the site in sight, and let's see. 1, 3, I'll tell you - 1 3 blank 3. 1 3 blank 3 - that's Borman. I couldn't see it this time.

HOU This Houston Roger. Got 1 3 .3 Borman. Is that correct?

S/C Rog. Frank called that out. We got it - Frank got it on his side and I picked it up - I couldn't read it. Frank got those readings.

HOU Roger. We understand. We got some football scores for you if you'd like them.

S/C Roger. How's the Army Navy game?

HOU The Army Navy Game? You haven't been up there that long. Green Bay beat Minnesota 24 to 19. The Bears beat Baltimore 13 to 0 and Buffalo slipped by the Oilers 29 - 18.

S/C Roger.

HOU Gemini 7. Those football scores were courtesy of your ever-vigilant white team.

S/C Thank you.....

CP ..... you can tell . .... looky there, looky there. The investigators on those stripes are plain as day but those old numbers aren't quite so plain.

HOU Rog. Understand that the stripes are plain as day but the numbers aren't quite as clearn.

S/C Roger. The markers that they have out there for identifying are plain as day.

HOU Roger, understand the markers are plain as day.

HOU Gemini 7, Houston Cap Com. Did you ever get a chance to snap a picture of Houston this time?

S/C Uh no. We're too far north.

HOU Roger.

S/C Gene, we did get to see this strap or stuff we got hanging again, uh, just briefly, looks like white rubber material.

HOU Understand you've seen it recently and it looks like a white rubbery type of strap.

S/C Right. It's very jagged, looks like it's calking material. It just drifted by the window here as we went over the site.

HOU Roger. Could it be any of the striping that they possibly put on the radiator?

S/C No. Definitely not. It's pretty thick stuff and it's jagged. Looks like it's at some separation plane.

HOU Roger.

We'll have to send up 6 here in a few days and take a look at it.

S/C Uh, there's an idea.

HOU AOS 91.

This is Gemini Control. We have just concluded our live voice transmission between spacecraft Gemini 7 and the Mission Control Center as the spacecraft

passed over the United States and was picked up by the Texas Tracking Station at Corpus Christi. We are now 27 hours and 11 minutes into the mission of spacecraft Gemini 7. This is Gemini Control.

END OF TAPE

This is Gemini Control. We are now 27 hours and 20 minutes into our mission. Spacecraft Gemini 7 at the present time is moving over the South Atlantic on its 18th revolution which started a few minutes ago. During the live voice pass of the spacecraft over the states, Command pilot, Frank Borman reported that the square ground patterns placed near Laredo for the crew to test visibility were plainly visible to the crew, but that the numbers inside the squares were not clear. He also reported they saw again the strap that obviously is attached to the spacecraft. The crew reported it appeared to be some kind of a light thick rubbery material, and our Flight Director, Gene Kranz, commented that we will probably wait until the launch of Gemini 6 and then we may be able to identify that strap. This is Gemini Control at 27 hours and 21 minutes into the mission.

END OF TAPE

This is Gemini Control at 28 hours and 8 minutes into the flight. At the present time our spacecraft is passing over the Pacific Ocean. A few minutes ago we had voice contact through the Carnarvon Australian tracking station and we will now play back that tape conversation between spacecraft Gemini 7 and the Carnarvon tracking station.

S/C Gemini 7

Carnarvon Carnarvon CAPCOM

S/C What do you have?

Carnarvon Roger, we have nothing for you at this time. Everything looks good from the ground.

S/C Thank you.

Flight How does everything look out there Carnarvon? Still go?

Carnarvon Roger flight, everything still looks real good.

Flight Do you think you have a multiplexer problem out there?

Carnarvon Negative

Flight Okay, we have talked to the Texas sight and they have seen some of these reset on the high level boilerplexer and it does't seem to be too bothersome at this time but we are going to write out a short briefing message to the network.

Carnarvon Okay, we are night time on that pass but we had TM real solid on them. We looked at the whole thing and during that time they sat in there real close.

Flight Okay

Carnarvon We've got about a minute to go.

Flight I've got a minute and 28 seconds for you to go.

Carnarvon Yea.

Carnarvon Gemini 7 Carnarvon CAPCOM, this will be our last pass for this series. We'll be back up with you again on rev 27. LOS in about a minute or so.

S/C Okay we will see you then.

Carnarvon Right O.

S/C . .

Carnarvon Yea I imagine.

Carnarvon Will you find out flight if you still have AKC.

Flight Roger, that was a pretty corny accent you had there. I think we will have to send you back there again to see if you can correct it.

Carnarvon Back where flight?

Flight To Carnarvon.

Carnarvon Okay. Count on thirty.

Flight Yea that is a hardship tour out there.

Carnarvon Granted . .

Flight Okay.

END OF TAPE.

This is Gemini Control. We are now 28 hours and 20 minutes into the mission of spacecraft Gemini 7. At this time our spacecraft is passing over the Pacific on its way into the tracking range of the Hawaiian tracking station. We are now on the 18th revolution over the earth and we are in a quiet period of the flight. There's not much activity listed on our flight plan.As the spacecraft comes over the States on this pass we will have a medical pass on the Command Pilot, and the fuel cells will be purged as we also, while we are coming over the States. And that is about all the activity that we have on our flight plan at this time. This is Gemini Control, 28 hours and 20 minutes into the mission.

END OF TAPE

This is Gemini Control. We are now at 28 hours and 59 minutes into the mission of spacecraft Gemini 7. At the present time the spacecraft is passing over the South Atlantic on its 19th revolution around the earth. A short while ago, as the spacecraft passed over the United States, we had voice communication through the Corpus Christi Tracking Station. Conversation between the Mission Control Center and the spacecraft crew. At that time we also had a medical pass on the Command Pilot and they purged the fuel cells aboard the spacecraft on command from the ground. And at this time we will play back that taped voice communication between the spacecraft and the Mission Control Center.

Texas - go remote

TEX It's remote.

HOU Gemini 7, Gemini 7, we have a good oral temp, give us a blood pressure and stand by for Surgeon.

Surgeon Gemini 7 Houston Surgeon - your cuff is full-scale.
Gemini 7 we have a good blood pressure, standing by for exercise on your mark.

S/C Mark. ... Frank wants to know if Sue and all the boys got back from the Cape ok.

HOU That's affirm. They all got back ok and she said everything here is fine.

S/C Roger.

Surgeon Cuff is full-scale.
Gemini 7 we have a good blood pressure. Standing by for your food, water, and sleep report.

S/C Houston this is 7. We had a third meal at 2140, day 2, meal B. The Command Pilot's total water consumption to date, 97 ounces.